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Guest Editorial

The American Way in Chemistry

TEN years ago the production of pure vitamins amounted to practically nothing as a business. Today it is big business with yearly sales of the order of hundreds of millions of dollars and this is only the beginning, not because of the increased use of these chemicals in pharmaceuticals but because of the food enrichment program, referred to by Dr. C. R. Addinall in his paper in this number. The pharmaceuticals call for pounds of vitamins, at the most, whereas the food enrichment program for all forms of life calls for tons of them. The use of vitamins in the poultry business is tremendous. Vitamins are now being used in the feed of farm animals and what a market this makes available to the producers of synthetic vitamins! The flour enrichment program, whether one approves of it or not, calls for tons of thiamine, riboflavin and nicotinic acid right now. What will be the demand if this program spreads over the world in the post-war food program being planned? Right in our midst today, there is happening one of the most remarkable events in the history of chemical industry. Virginia is playing its part in this development at the little town of Elkton.

The milestones having to do with putting on the market a synthetic vitamin can well be illustrated by the recent brilliant investigative work on biotin. Vitamins must first be isolated in pure crystalline form. This was done for biotin in 1936 when Kőgl and Tőnnis announced the isolation of its methyl ester from egg yolk. Chemical structure investigations came next. In late 1942, du Vigneaud and collaborators announced what they believed the structural formula for biotin to be. Since then several groups of investigators in this country and abroad have been working on the third milestone, the synthesis of biotin. An article in SCIENCE of May 14, 1943, by Harris, Wolf, Mozingo and Folkers, of the Merck and Company research laboratories, begins with these two important statements, "Biotin has been obtained by a total synthesis in this laboratory, and it has been found to be identical with the natural product. This verifies the structure assigned to biotin." If this work is verified by other investigators the next milestone will be tackled, that of producing synthetic biotin on a commercial scale and at reasonable cost. If this is accomplished successfully pure biotin can be made available in ton lots. At the present time there is far less than an ounce of the pure natural product in existence. The final milestone has to do with finding practical uses for the synthetic substance. One potential use certainly for biotin is in causing yeast to grow faster and the brewery industry uses lots of yeast!

Practical examples of what the accomplishment of these milestones in vitamin research will bring about are the following: Ascorbic acid (vitamin C) sold for $213.00 an ounce in 1934. It sells now for $1.07 an ounce and is being shipped abroad lend-

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lease in ton lots. In 1935 thiamine (vitamin B_1) cost $300.00 a gram to produce. The latest quotation for it is $.35 a gram. Nicotinic acid dropped from $35.00 a pound in 1937 to $5.00 per pound today and riboflavin (vitamin B_2), which sold for $17.50 a gram in 1938 now brings $.57 for the same amount. In spite of the tremendous vitamania which has accompanied these developments, the large scale production of synthetic vitamins is one of the miracles of modern chemistry and medicine, *and it is 99 per cent American.*

Of the thirteen vitamins almost universally agreed upon as existing, *all* can be produced in pure form, since vitamin A esters are now available by high vacuum distillation and vitamin D_2 and D_3 are manufactured as pure crystalline substances, the one by irradiation of ergosterol and the other by a similar treatment of a derivative of cholesterol. Vitamins A and D were formerly sold only as concentrates from fish-liver oils. Vitamins C, E, K and the eight generally recognized members of the so-called B complex can be made in a laboratory. Thiamine, nicotinic acid and riboflavin of this group, like vitamin C, are manufactured in chemical plants on a tonnage basis. Pyridoxine (vitamin B_6), pantothenic acid and especially biotin are being made synthetically in very much smaller quantities. There is not complete agreement as to whether inositol, choline and para-amino-benzoic acid should be considered as vitamins. These substances have been known for many years as ordinary organic chemicals so their production in ton lots will be a simple matter if they are ever required in such amounts. There are about twenty other substances being discussed in the chemical literature which may "make" the vitamin fraternity sooner or later, but like folic acid they have not yet quite "made the grade".

Certainly such results over a ten year period from research of this order would be impossible without university-industry team work of a high degree in a country where workers are well trained in this intricate field, where free enterprise is an inalienable right of the citizenry, and where foresight is an essential ingredient in business and research.

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Floral Eponym (6)

KUHNIA Eupatorioides was named by Linnaeus after Adam Kuhn (1741-1817) of Philadelphia who was the first professor of Botany in America. Kuhn began the study of medicine with his father, Dr. Adam Simon Kuhn. He then went to Upsala where he studied under Linnaeus. He also studied in London for a while and took his M.D. at Edinburgh in 1767. When he returned to Philadelphia in 1768 he became professor of materia medica and botany in the College of Philadelphia. He was physician to the Pennsylvania Hospital, consulting physician Philadelphia Dispensary, one of the founders and in 1808 president of the College of Physicians of Philadelphia. When 73 he "grieved" his patients by giving up practice and three years later after a brief illness he passed away in full serenity of mind and heart.

JAMES MARION SIMS: MEDICAL PIONEER*

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In Dr. Hall's invitation to address the Richmond Academy of Medicine, he stated that the guest speaker was to talk "about some phase of his own selection of the History of Medicine or about some individual who had something to do with the History of Medicine." My mind immediately turned to one of my own favorite medical heroes; and the opportunity to talk publicly about him, together with the honor of being chosen for such an occasion, overcame my better judgment. I accepted before there was time to think it over, and to realize that the little spare time to be wrested from four busy weeks was not enough to do justice to my subject. There is this consoling thought, however: if my address falls too far short of whatever anticipations some of you may have had, your Virginia courtesy and tolerance will, doubtless, temper your criticism; if it is too brief for the importance of this occasion, you will remember the brevity of time allotted for its preparation; and if it is too long, I can say with Pascal that I had not time to make it shorter.

Many years ago, while browsing around that book lovers' paradise, Leary's Old Book Store in Philadelphia, I came across a copy of *The Story of My Life,* by J. Marion Sims, and purchased it without delay. Since then it has been read and reread, until it is almost ready to fall apart; but it has never lost its fascination. From the first chapter one can hardly fail to be impressed with the two chief charms of the book: the genuine modesty of the author and the simple, clear style of his writing. It is written just as one can imagine he would have talked, with the absolutely natural style that is the goal of every professional writer.

That the book is written hastily is apparent from the number of discrepancies in it, which would almost certainly have been caught by the author with a careful re-reading. For example, Sims said in one place that Dr. Holbrook of the Charleston Medical School had only one equal as a teacher of anatomy, "and that was Ballou, of Jefferson Medical College." In the very next chapter, he wrote: "Professor Patterson (of Jefferson) was the best lecturer on anatomy then living. The next best to him was Hurlburt, of the Charleston College." The date of his marriage he gave as December 21, 1836; and on the same page he said that after their marriage he and his wife "spent the year 1836 at Mount Meigs."

These minor oversights are mentioned not by way of criticism, but as evidence that the book was written hurriedly. Most writers constantly have to remember Robert Louis Stevenson's admonition, "Easy writing makes hard reading; hard writing makes easy reading," which he probably borrowed from Sheridan's couplet:

> You write with ease to show your breeding,
> But easy writing's cursed hard reading.

One who has to write the hard way must envy Sims's style—easy writing which makes easy reading.

Dr. Sims tells us that many of his friends had urged him to leave notes of his life; but it remained for a little sick girl to persuade him to begin the task in earnest, and to influence the form of it.

"In May and June, 1883, I had under my professional care a very dear young friend, whom I had known from early girlhood. She had been an invalid for a long time, and was a bed-ridden sufferer. I made her frequent visits daily, as I saw that moral management was of great importance in the treatment of her case. During one of these social visits, when I was in the habit of drawing her away from herself by talking of topics of the day, she asked me a question about myself; when I replied, 'Oh, that is one of my life stories. You know life is a series of little stories which, when all strung together, make the complete story of the life. I have no time today, but tomorrow I will tell you all about it.' When the morrow came, and the story was told, she asked other questions of a personal character. And thus she catechised and cross-questioned me, day after day, and at last she even wished me to tell her the story of my courtship and marriage. At this I rebelled; but she insisted, and so she had her own way. It all ended in my agreeing to write out the life-notes in their smallest details. I am now surprised to see what an influence this poor little sick girl exerted over me in this

*Presented before the Richmond Academy of Medicine on March 9, 1943, as guest speaker for the Section on History of Medicine.

regard; for, if I had done this work five years ago, I would only have given an account of my struggles and successes, and left out the inner man, the personal life.

"I have now made a long apology for promising to write this life. But I have felt recently more justified in it by Mr. Ruskin's preface to 'The Story of Ida.' He says: 'The lives we need to have written for us are of the people whom the world has not thought of—far less heard of—who are yet doing most of its work, and of whom we may learn how it can best be done.'

"It is a trite saying, that 'every life is a poem, be it long or short.' Mine has been a real romance, full of incident, anxiety, hope, and care; some disappointments, and many successes, with much sickness and sorrow; but it has also been full of joy, contentment, and real happiness."[1]

James Marion Sims was born January 25, 1813, in Lancaster County, South Carolina—the same county that disputes North Carolina's claim to the nativity of Andrew Jackson. The first departure from absolute modesty occurs in the narrative when he lets the reader know that "the ancestors of my father, John Sims, were of the English colonists of Virginia," and that his paternal great-grandfather, Sherrod Sims, was born in Virginia in 1730. His mother, Mahala Mackey, was of Scotch-Irish origin.

John Sims never had a day's schooling until Marion was six months old—and then went to school for only six months. As is so often the case, the father's lack of education made him appreciate its advantages all the more, "and so," in Sims's words, "he began with me at an early age." When only six years old, young Marion was sent to a boarding school "some six or eight miles from home", kept by a one-eyed Irishman named Quigley, aided and abetted by his two daughters. It was a true counterpart of Squeers's Dotheboys Hall. The amiable Quigley made it an invariable rule to initiate every new boy with a flogging, "and when he began he seldom stopped until the youngster vomited or wet his breeches."

Little wonder that his experience here led Marion to conclude "that the best place for a child under ten years of age is with his mother."

His next school was taught by another Irishman, John E. Sanderson, who was also "very cruel, and whipped the boys often without any provocation at all," except on Monday. "He always got drunk on Saturday night, remained so all day Sunday, and came to school Monday morning as full as he could be, and then was always jolly and good-tempered. He would then pinch the girls' arms, and say witty things to the boys, and he never whipped anybody on Monday, so we were always happy on that day. But when Tuesday arrived he reverted to his old ways of severity."

Parents had to put up with Sanderson's cruelties to their children because he "was the only teacher in the county, and if a boy didn't go to school to him there was no school for him to go to."

In 1825 the family moved to Lancaster, and John Sims, together with other citizens, raised a fund to build a high school in the village, which was called Franklin Academy. A Pennsylvanian, Henry Connelly, was secured as its first principal. He was an excellent teacher, albeit also a strict disciplinarian. Marion admits that he lied to him on one occasion. He had placed a large pin in the master's seat, for the benefit of a model student who had the habit of sitting there studying while the others were out playing. On this day the boy stayed outdoors, and the teacher sat on the pin, but "flew up like a rocket." White with rage, he began the old process of asking each student in turn if he were guilty. All, including Marion, plead not guilty. His comment was, "I always felt sorry that I had to lie, but I can not say I have regretted so much that I did." One is reminded of the little girl's definition of a lie as "an abomination in the sight of the Lord and an ever present help in time of trouble."

After two other principals had followed Mr. Connelly, young Sims and five other boys were ready in 1830 to enter the sophomore class of South Carolina College at Columbia, later the University of South Carolina. Before going to Franklin Academy, Marion had tried to persuade his father to let him forego any further education and get a job as clerk in a store. John Sims "said, no; that his own education was so entirely wanting, he knew how important it was for every man to get along in the world, and he was determined to give his children a good education, if he did nothing more for them, and that was better than money." Six months after Marion entered South Carolina College, he grew homesick, and decided to relinquish his college

course and help support the family. He left college and went home, only to be chased back promptly by his mother—his father being away from home at the time.

Soon after he got to college, he was invited to an oyster supper where wine was served, and had the mortifying experience of being made quite drunk by one small glass of Madeira. He made a conscientious effort to increase his tolerance, but in vain. After being carried back to the college several times as a result of the minimum social drink, he gave up and remained a teetotaler the rest of his life. He did, however, learn to play whist, and indulged in two or three games a week. Later on, his friend, Dr. Thornwell, when interceding for him with the mother of his sweetheart, said, "I was in college with Marion Sims, and I know that he was a fellow of good morals. He swears a little bit occasionally, but he can be cured of that."

Sims was graduated in the class of 1832. He said that the class of 1831 "possessed more talent in it, and men of more promise, than any other half-dozen classes that had been turned out of it since its foundation." The great Presbyterian minister, Dr. James Henley Thornwell, was first honor man in this class. "Thornwell was the great orator of the society, and he was such a giant in intellect that, when it came to the discussion of a subject, he overrode everything with the strong will of his mighty genius, and everybody else seemed to be a mere pygmy in his grasp. Thornwell was perhaps one of the greatest intellects that the South Carolina College has ever produced, and second only to John C. Calhoun."

Dr. Hall has reminded me that a grand-daughter of Dr. Thornwell, Mrs. Edwin S. Reid, lives in Richmond.

In passing, it may be of interest to note that Dr. Thornwell intended to practice law, and that his conversion from the law to the ministry—certainly a great change—was due to the influence of the beautiful sister of a schoolmate, who "was a rigid member of the Presbyterian church." Even though she influenced his career so greatly, however, she did not marry him. Thornwell subsequently became president of the South Carolina College and of the Theological Seminary.

In contrast with its predecessor, Sims says that his own class of 1832 "represented the other extreme, and was equally conspicuous for its want of talent." Of himself he says, "I never was remarkable for anything while I was in college, except good behavior. Nobody ever expected anything of me, and I never expected anything of myself."

Apparently Sims was one of those individuals who mature late—whose adolescence is prolonged well past the voting age. He also, by his own admission, suffered until well into maturity from an inferiority complex. His choice of a profession was the result of this inferiority complex. Let him tell this story in his own words:

"There was no premonition of the traits of a doctor in my career as a youngster; but it was simply in this way:

"At that day and time, the only avenues open to a young man of university education were those of the learned professions. A graduate of a college had either to become a lawyer, go into the church, or to be a doctor. I would not be a lawyer; I could not be a minister; and there was nothing left for me to do but to be a doctor—to study medicine or to disgrace my family; for it was generally thought that a man who had gone through college, and came back and settled down as a merchant's clerk, couldn't have had much in him if he didn't take to a profession. So there was nothing else left for me but to study medicine. One day my father said, 'I guess you had better go down and see Mr. Howard about your beginning your studies with him.'

"I said: 'Father, I know that I have been a great disappointment to you. I knew from the outset that you wanted me to become a lawyer. It is impossible for me to be a lawyer; I have neither the talent nor the gifts necessary for the profession. I can not enter Mr. Howard's office.' He said: 'What in the world are you going to do, then?'

"I said: 'If I hadn't gone to college I know what I should have done. I would have accepted Mr. Stringfellow's offer of three hundred dollars a year, and gone into his store two years ago, and by this time I should be getting five hundred dollars a year. But as it is, I suppose I must study a profession, so long as I have had a university education, and there is nothing else left for me but the study of medicine, if I *must* take a profession.'

"He said to me: 'My son, I confess that I am disappointed in you, and if I had known this I certainly should not have sent you to college.'

"I replied: 'I did not want to go; I knew that you were not able to send me there, and I knew that you would be disappointed, and that I should make you unhappy. I am sure that you are no more unhappy about it than I am now. But if I must study a profession, there is nothing left for me to do but to study medicine.'

"He replied: 'Well, I suppose that I can not control you; but it is a profession for which I have the utmost contempt. There is no science in it. There is no honor to be achieved in it; no reputation to be made, and to think that *my* son should be going around from house to house through this country, with a box of pills in one hand and a squirt in the other, to ameliorate human suffering, is a thought I never supposed I should have to contemplate.' "

However, the father swallowed his bitter disappointment and sent him to arrange to "read medicine" with Dr. Churchill Jones, who was the leading practitioner of Lancaster, but whose appetite and capacity for alcoholic beverages greatly exceeded his young pupil's. He had, however, marked surgical ability, and doubtless this influenced Marion's career.

In November, 1833, Marion entered the year-old Medical College of South Carolina at Charleston. Here he studied from the middle of November until the last of February, when the first "year" of his medical course was finished. For the second "year" he went to Jefferson Medical College, in Philadelphia. Here the course lasted five months—from the first of October to the first of March.

While he was at Jefferson, there occurred what Sims, in a model of understatement, called "a most unfortunate thing". A patient who had died of smallpox was brought into the dissecting room, and as a result quite a number of the students contracted the disease. Two or three of these died. Evidently vaccination, although known at this time, was by no means commonly practiced. Young Sims sat up with a friend from Alabama, named Lucas, the night before he died. Fortunately, he himself had been vaccinated some years before, and so escaped infection.

Marion graduated on the first day of March, 1835—after approximately eight months of medical training, exclusive of Dr. Churchill Jones's tutelage. Can one wonder that he said, "When I graduated, I felt absolutely incompetent to assume the duties of a practitioner."? By way of post-graduate instruction he, with thirty or forty others, took a private course of lectures advertised by Professor Patterson on "Regional Anatomy and Surgical Anatomy". He says: "When I graduated I presume I could have gone into the dissecting-room and cut down upon any artery, and put a ligature around it, but I knew nothing at all about the practice of medicine. . . . I had had no clinical advantages, no hospital experience, and had seen nothing at all of sickness."

His father rented an office for Marion on Main Street, and he had a long tin sign painted for it. After waiting two or three weeks, he received his first call, to see a baby with "summer complaint". True to his surgical bent, he lanced the infant's gums; but that was all he knew to do. However, he told the mother to send someone to his office in an hour, when he would have medicine ready. Then he hastened back to his office, took from his seven-volume library Eberle's treatise on "Diseases of Children," turned to the discussion of Cholera Infantum, and read it through. Before little Jennie came, he had compounded the first prescription given in the article. When he found the baby no better next day he tried the second prescription. This process was repeated day after day, as the baby continued to grow weaker. Before the last prescription was reached, the baby died. Young Dr. Sims attended the funeral, and was the chief mourner of all.

Two weeks later, another man came and asked that Marion go to see his baby—adding, "I hope you will have better luck with it than you did with Andy's baby." To this Marion replied, "Elias, if I don't, I'll quit the town." This time he began at the end of the chapter in Eberle and worked forward; but the result was the same. This baby also died. Again the young doctor was chief mourner at the funeral. Then he tore down the long tin sign from his office door and dropped it down an old abandoned well.

"I was then so demoralized," he said, "and so disgusted with my beginning in the profession, that if I had had money enough, or any money at all, even the small sum of five thousand dollars, I would not have given another dose of medicine. But there was no other alternative for me. Being obliged to continue in the profession that I had started in, I

was determined to make up my deficiency by hard work; and this was not to come from reading books, but from observation and from diligent attention to the sick."

The one bright recollection in this dark phase of Dr. Sims's life was the case of "old Captain McKenna, the village rich man. He would go on terrific sprees, ending in delirium tremens." After one such spree had reached its logical conclusion, he sent for Sims, who "attended him very carefully for two days and nights," and was rewarded with a ten-dollar bill—his first professional fee, and the only money he ever got in Lancaster. His sage comment has been repeated over and over again by every veteran physician: "The patients that ought to have lived died, and the ones that ought to have died got well."

Since he could no longer face the music in Lancaster, Sims decided to go to Marengo County, Alabama. Accompanied by his father, he started on the thirteenth of October. (Incidentally, Sims regarded the thirteenth as his lucky day, and also Friday.) In three weeks they had reached Mount Meigs in Montgomery County, Alabama. Here the welcome from a number of friends who had previously moved from South Carolina was so cordial that he decided to locate there. His first call was to see, in consultation, the daughter of a wealthy planter, Mr. Benjamin Baldwin. He shrank from going, and advised that a doctor be called from Montgomery. He was finally persuaded to go, however, and states naively that Mr. Baldwin "was glad to see me, and welcomed me as if I had been a real doctor." The patient was quite ill, but Sims tactfully agreed with the therapy of the family physician, Dr. Bronson. He remained several days, going through the formality of consulting with Dr. Bronson two or three times a day, and meanwhile enjoying the society of the patient's charming sister and her first cousin.

Just before he left, he was asked to see a Mr. Adams, "Mrs. McElroy's overseer", who had been sick for more than two weeks. Again he demurred, on the ground that he was too young and inexperienced, but his objection was over-ruled. When he entered the room, the sick man greeted him, "My God, Evans, do you call that thing a doctor? Take him away; take him away. I have got no use for such a looking man as that. I am too sick a man to be fooled with. Take him away."

Profiting by the Scriptural proverb, Sims won the sick man's good will by giving him a soft answer, and had from him a minute account of his illness. He left without prescribing for him, however. Four weeks later, he was again summoned to see Mr. Adams, who had steadily grown worse, although eight or nine other doctors had seen him in the meantime. This time he examined him and found a large, fluctuating mass on the right side of the abdomen. Very simply he stated his findings: " 'There is matter here, and it must come out, or this man will die. It will have to be opened and come out.' Mr. Adams said, 'But how can that be so, when so many doctors have seen and examined me, and none of them have found it out?'

"I said: 'Of this I am sure. I am not much of a doctor, but when it comes to seeing and feeling and handling things, I know something, and I know that there is matter in this belly, and it either comes out or you will die.' "

The operation is described thus: "We went into the room—it was before the days of anesthetics—and, pulling out a bistoury, I plunged it into his belly. I think it was one of the happiest moments of my life when I saw the matter flow and come welling up opposite that bistoury. It discharged two quarts of matter at once, and continued discharging for two or three days. A few days after that Mr. Adams was able to walk out, and a week after he rode over to Mr. Dick's, seven miles, and dined."

Naturally this operation and its successful outcome helped establish young Dr. Sims's professional reputation. He had uncovered his natural talent for surgery, and his self-confidence began to increase.

In the spring of 1836 he joined a volunteer company from Mount Meigs in an expedition against the Creek Indians. The company was gone five weeks—fruitful weeks for Sims. As he said, "I went into that command perfectly unknown, and a boy in appearance, but a man in spirit; and I came out of it with one hundred and twenty friends. All of the command were devoted friends of mine and to me. It laid the foundation of my popularity so deeply that I was soon sent for as the doctor for all the fellows that had been with me in that little excursion into the Creek Nation."

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He soon had all the practice he could handle; but unfortunately became himself infected with the prevalent malaria. His colleague, Dr. Lucas, came to see him and wanted to bleed him, but was politely refused. When he had been sick for two weeks, and was steadily growing weaker, a young English druggist, named Coster, who had become acquainted with him during the expedition against the Creek Indians, came into Mount Meigs with a supply of quinine just in time to save his life. Apparently this was the first case in the community treated by full doses of quinine. Soon afterward, according to Sims, "The writings of Fearne and Erskine, in Alabama, were the first to throw light upon the proper method of treating malaria and malarial fevers. Until their day, the doctors were in the habit of bleeding and physicking people until the fever disappeared, and then giving them quinine, a grain or two, three times a day."

After more than two months of tedious convalescence, Sims had recovered sufficiently to return to Lancaster and marry his childhood sweetheart, Theresa Jones, the daughter of Dr. Bartlett Jones, and the sister of Dr. Rush Jones. (The grandfather of the late Dr. Abe Jones, of Walnut Cove, N. C., was a brother of Dr. Bartlett Jones. Both of Dr. Abe Jones's sons practice in Winston-Salem, and are graduates of the Medical College of Virginia.) They were married on December 21, 1836, by the brilliant Dr. Thornwell, who was then pastor of the Presbyterian Church in Lancaster, and who had interceded for his old friend when Theresa's mother did not think Marion quite good enough for her daughter and objected strenuously to the match.

The young couple returned for a year to Mount Meigs, but in 1837 a Dr. Blakey made Marion an attractive offer to go into partnership with him in Cubahatchee, Macon County. Here he and his wife lived in a two-room log cabin, where their first two children were born.

Then, after he had been in practice three and a half years, he did an amazing thing. A man whom he had known at his Philadelphia boarding house offered him, without any money consideration, an equal partnership in a large clothing house to be established in Vicksburg, Mississippi, and financed by a group of Philadelphia capitalists. Impetuously he decided, "What is the use of my struggling here always, for two thousand or three thousand dollars a year, with no prospect of advancement in life, when such an offer comes to me unsought and unsolicited?" He told Dr. Blakey of the offer, sold his little home for $400, and was getting ready to leave for Vicksburg when the news came that "the whole thing had exploded." Dr. Blakey was happy to have him remain, but he had to move into another house. He "went back to work again and in real earnest, giving up all ideas of getting rich fast."

This episode is further proof of Sims's delayed adolescence. He himself says: "I am an example of a man who has never achieved the ambition of his early life. My successes have been in a direction that I never dreamed of when I started. I had no particular interest in my profession at the beginning. I studied away at it, and at the end of five years had become quite a respectable physician, and, I can say, a tolerably successful one. Still, I was really ready, at any time and at any moment, to take up anything that offered, or that held out an inducement of fortune, because I knew that I could never make a fortune out of the practice of medicine. I, of course, never dreamed of making any other than a local reputation."

After going back to work in earnest, he acquired a large practice, but managed to mix pleasure with business. Wherever he went, he carried his gun and bird dog with him, and rarely returned from his day's round of visits without a partridge, squirrel, or duck. He says that he was perfectly happy. "I had a beautiful wife, two lovely children, and was making three thousand dollars a year. There was never a fellow so happy as I, and I expected to remain there forever."

During his fourth year in Cubahatchee—in 1840—his earthly paradise was ended by a severe malarial infection, which he observed was common "in new countries, West and South, . . coming from a decomposition of vegetable matter in alluvial soils." His illness was so severe that his life was despaired of. Again he was saved by effective doses of quinine, this time given by a Dr. Holt, one of the leading practitioners of Montgomery. He had no more than gotten on his feet again, however, when his wife, both children, and the servants were attacked, and he himself had a recurrence. The whole family were so miserable that he and his wife decided to leave the community.

This time he located in Montgomery, though with

much misgiving. His inferiority complex was still at work, and he said of himself, "I am nothing but a little country doctor, from the pine woods, with no money and no reputation." However, his family "were all completely malarialized and demoralized," and he was desperate enough to take the chance. In twelve months he had had seventeen different attacks, and his family had also suffered.

In Montgomery he was given a warm welcome by the other doctors, and soon made to feel at home. He paid his adopted home a great compliment when he said, "I never saw a town where there was so little bickering and jealousy between doctors. A few valuable and able men at the head of the profession kept the others in the proper line."

When Sims went to Montgomery, he gave away his dog and sold his gun, and "never loaded and shot a gun" thereafter. His adolescent period ended when he was twenty-eight years old, and he entered upon a vigorous maturity. His practice grew steadily, and his surgical ability was soon recognized. He was the first surgeon in the South to operate successfully for club foot, and one of the first to operate on crossed eyes. He had established quite a reputation as a surgeon before he wrote anything for a medical journal. His first literary effort was a report of a successful operation for a double hare lip. This was done at the earnest request of Dr. Harris, of Baltimore, founder of the Baltimore College of Dental Surgery, and editor of the *Journal of Dental Surgery*. While on a visit to Montgomery, Dr. Harris heard of the operation and persuaded Sims to write an account of it for his journal. When the journal containing the article appeared, the author bashfully hid it behind some large books in his library. To his chagrin, Dr. Ames, the leading practitioner and most prolific writer of Montgomery, came in his office, walked straight to the book-case, pulled out the book concealing the Dental Journal, and read the article through, while Sims stood trembling like a schoolboy. When he had finished reading it, Ames said, "What would I give if I had the faculty of expressing myself in writing like that?"

With Ames's encouragement, Sims began to contribute regularly to medical journals. His comment on the incident is characteristic: "So it was that I always felt timid about writing, and never dreamed that I could write until the circumstance related, in connection with my friend Dr. Ames. Even to this day the finding of that 'Dental Journal' is inexplicable to me. I do not believe there are any accidents in this world. I do not look upon that as an accident, but as a Providential affair."

Although he was a successful family practitioner, Sims abhorred obstetrics, and "never pretended to treat any of the diseases of women, and if any woman came to consult me on account of any functional derangement of the uterine system, I immediately replied, 'This is out of my line; I do not know anything about it practically, and I advise you to go to Dr. Henry or Dr. McWhorter.'"

Little did he know that he was destined to become the founder of modern gynecology! "Lord, we know what we are, but know not what we may be."[2] The evolution of the gynecologist began on this wise: After ten years of practice he encountered his first case of vesico-vaginal fistula in Anarcha, a 17 year old Negro girl, who had had a prolonged labor. Within two months he had seen two other such cases. A careful search of the literature gave no help to him or his patients except the doubtful comfort that this horrible affliction was rarely fatal. Just after he saw the third patient, he had an urgent call to see a woman who had fallen from a runaway pony with all her weight on the pelvis. She was complaining of great pain in her back and a tenesmus in both bladder and rectum. Sims writes: "If there was anything I hated, it was investigating the organs of the female pelvis. But this poor woman was in such a condition that I was obliged to find out what was the matter with her. It was by a digital examination, and I had sense enough to discover that there was retroversion of the uterus. It was half turned upside down, and I took it for granted that this sudden dislocation, or disturbance of the pelvic organs, was the result of the fall on the pelvis. The question was, what I should do to relieve her."

Remembering how a former teacher had told his class to treat a sudden retroversion of the uterus, he placed the patient in the knee-chest position and with two fingers in the vagina, began pushing against the cervix with all his might. All at once, he said, he could not feel anything, either the uterus or the sides of the vagina. While he was wondering what it all meant, the patient said, "Why, doctor, I am relieved." As she lay down on her side,

XUM

"there was," in Sims's words, "an explosion, just as though there had been an escape of air from the bowel. She was exceedingly mortified and began to apologize, and said, 'I am so ashamed.' I said: 'That is not from the bowel, but from the vagina, and it has explained now what I did not understand before. I understand now what has relieved you, but I would not have understood it but for that escapement of air from the vagina. When I placed my fingers there, the mouth of the vagina was so dilated that the air rushed in and extended the vagina to its fullest capacity, by the natural pressure of fifty-five pounds to the square inch, and this, conjoined with the position, was the means of restoring the retroverted organ to its normal place.'

"Then, said I to myself, if I can place the patient in that position, and distend the vagina by the pressure of air, so as to produce such a wonderful result as this, why can I not take the incurable case of vesico-vaginal fistula, which seems now to be so incomprehensible, and put the girl in this position and see exactly what are the relations of the surrounding tissues? Fired with this idea, I forgot that I had twenty patients waiting to see me all over the hills of this beautiful city. I jumped into my buggy and drove hurriedly home. Passing by the store of Hall, Mores & Roberts, I stopped and bought a pewter spoon. I went to my office where I had two medical students, and said, 'Come, boys, go to the hospital with me.'

"'You have got through your work early this morning,' they said.

"'I have done none of it,' I replied; 'come to the hospital with me.' Arriving there, I said, 'Betsey, I told you that I would send you home this afternoon, but before you go I want to make one more examination of your case.' She willingly consented. I got a table about three feet long, and put a coverlet upon it, and mounted her on the table, on her knees, with her head resting on the palms of her hands. I placed the two students one on each side of the pelvis, and they laid hold of the nates, and pulled them open. Before I could get the bent spoon-handle into the vagina, the air rushed in with a puffing noise, dilating the vagina to its fullest extent. Introducing the bent handle of the spoon I saw everything, as no man had ever seen before. The fistula was as plain as the nose on a man's face. The edges were clear and well-defined, and distinct, and the opening could be measured as accurately as if it had been cut out of a piece of plain paper. The walls of the vagina could be seen closing in every direction; the neck of the uterus was distinct and well-defined and even the secretions from the neck could be seen as a tear glistening in the eye, clear even and distinct; and as plain as could be. I said at once, 'Why can not these things be cured? It seems to me that there is nothing to do but to pare the edges of the fistula and bring it together nicely, introduce a catheter in the neck of the bladder and drain the urine off continually, and the case will be cured. Fired with enthusiasm by this wonderful discovery, it raised me into a plane of thought that unfitted me almost for the duties of the day. Still, with gladdened heart, and bouyant spirits, and rejoicing in my soul, I went off to make my daily rounds. I felt sure that I was on the eve of one of the greatest discoveries of the day. The more I thought of it, the more I was convinced of it.

"I immediately went to work to invent instruments necessary for performing the operation on the principles that were self-evident on the first inspection of the first case. The speculum, or retractor, was perfectly clear from the beginning. I did not send Lucy home, and I wrote to her master that I would retain her there, and he must come and see me again. I saw Mr. Wescott, and I told him that I was on the eve of a great discovery, and that I would like to have him send Anarcha back to my hospital. I also wrote to Dr. Harris, saying that I had changed my mind in regard to Betsy, and for him to send her back again. I ransacked the country for cases, told the doctors what had happened and what I had done, and it ended in my finding six or seven cases of vesico-vaginal fistula that had been hidden away for years in the country because they had been pronounced incurable. I went to work to put another story on my hospital, and this gave me sixteen beds; four beds for servants, and twelve for the patients. Then I made this proposition to the owners of the negroes: If you will give me Anarcha and Betsy for experiment, I agree to perform no experiment or operation on either of them to endanger their lives, and will not charge a cent for keeping them, but you must pay their

taxes and clothe them. I will keep them at my own expense. Remember, I was very enthusiastic, and expected to cure them, every one, in six months. I never dreamed of failure, and could see how accurately and how nicely the operation could be performed."

After three months of preparation, he operated first on Lucy. It was before anesthesia had come into use, but the poor girl, on her knees, bore the operation—which lasted about an hour—with great bravery. About a dozen doctors came to witness this epoch-making operation, all glad to assist. To Sims's disappointment, the operation did not succeed, though the fistula was made much smaller. Another operation was performed on Betsey, but it, too, failed. The size of the fistula was greatly reduced, but the urine continued to escape from the bladder. Patiently Sims repeated the operation over and over, continually modifying his technique; but after four years had passed, success seemed no nearer than at first. The expense of keeping the patients was an enormous tax. The other doctors in Montgomery, who at first were anxious and willing to help, grew tired. His brother-in-law, Dr. Rush Jones, begged him to give up the effort. However, he trained the patients to assist him in operating on other patients and kept on trying. At long last a combination of fine silver wire sutures threaded on perforated shot made the thirtieth operation on Anarcha a success.

While these experiments were in progress, Dr. Sims said, "I had all the practice I could attend to, and more than I ought to have attempted. Many a time I said to my wife: 'We are too happy; I have never seen a man in my life that was satisfied with his surroundings, but I am perfectly satisfied, and have nothing more in this world to desire. I am happy in my home, in my wife and children, in my friends, in my position, in my prospects for the future. I am perfectly content, and nothing could induce me to leave Montgomery. I have no ungratified ambition or desire.' "

This happy state did not last long. In 1848 their three-year-old son died of diarrhea. Six weeks after his first successful operation for vesico-vaginal fistula, Dr. Sims contracted the malady that finally forced him to leave Montgomery to live in New York. Dr. James K. Hall thinks it was pellagra, and that is certainly a logical diagnosis. Dr. Sims speaks of it as a chronic diarrhea, and said that it was endemic all through the Valley of the Mississippi. He wrote: "When you see in the South a man in vigorous health and middle life gradually wasting away, and at the end of eighteen months drop as a skeleton into the grave, you may take it for a positive fact that he has died of chronic diarrhoea." Later he stated that his throat and tongue were so ulcerated that he could hardly speak; but he does not mention having the skin manifestations of pellagra.

A visit to Cooper's Well, in Mississippi, gave him temporary relief; perhaps also the winter season helped. There was a recurrence in the Spring, which was not cured by a second visit to Cooper's Well. In his search for health, he tried the famous Rockford Island Springs, near Lexington, Virginia. If this water had proved successful, Marion Sims might have practiced in Richmond. Finally, in May, 1853, he, with the backing of his wife, took the heroic step of going to New York to live, since he had found that the climate there agreed with him better than any other.

The reception given him by the medical profession of New York was in marked contrast to the generous welcome extended by the doctors of Montgomery. The *American Journal of Medical Sciences* had published his article on the treatment of vesico-vaginal fistula, and his reputation had preceded him. The leading surgeons of the city called on him, and soon Dr. Buck—he of the extension apparatus fame—invited him to bring his instruments and help operate on a patient with vesico-vaginal fistula. The operation was successful, although Dr. Buck had failed several times previously. A week or so later, Dr. Buck borrowed the instruments again, but this time did not invite Dr. Sims to the operation. Soon he and other surgeons were performing Sims's operation, and he himself was left out in the cold. He said to himself, " 'I'm a lost man unless I can get somebody to create a place in which I can show the world what I am capable of doing.' This was the inception of the idea of a woman's hospital. If the profession had received me kindly in New York, and acted honorably and gentlemanly and generously toward me, I would not have thought of building a woman's hospital. Some people have given me the credit of coming to New York with the ex-

XUM

press purpose of establishing a great hospital devoted to the diseases of women and their treatment. When I left Alabama for New York I had no idea of the sort in the world. I came simply for a purpose, the most selfish in the world—that of prolonging my life. I saw that I could not live in any other place than New York, and for that reason, and no other, I came."

When he decided to leave Montgomery for New York, Dr. Sims had sold his house and interest in the drug store. Most of the money received for these went into a house at 89 Madison Avenue. During this period of waiting his wife kept boarders and so virtually supported the family. He had still not entirely recovered from his illness, and the cold reception given him by the New York doctors was most depressing. The little balance left from the purchase of his house was almost exhausted. Just when everything seemed darkest, help came from an unexpected quarter. He happened to meet a former patient from Montgomery, named Beattie, who naturally inquired how things were going. When Sims told his melancholy story, Beattie replied that he knew the very man who could help him. The next day he arranged a meeting with this man, Henri L. Stuart, a newspaper reporter—"a tall man, with thin, brown reddish hair, a wax nose . . . a man of great intelligence, great energy." After hearing Sims's story, Mr. Stuart took complete charge of the situation and outlined his campaign thus: "We will rent Stuyvestant Hall; we will advertise in the newspapers for the doctors to attend a meeting, which is to be addressed by Dr. J. Marion Sims, late of Montgomery, Alabama, on the necessity of a hospital in the City of New York for the treatment of the diseases of women. We will invite all the leading doctors in town by special cards, and they will come to hear you, and will be wise enough to indorse what you have to say. If you tell your story to the crowd of doctors that I will get there, as you have told it to me, we will carry the day. If you don't make the d—dest failure that a man ever made in this world, or can make, in one month from now, instead of being a beggar, as you make yourself out, you will be dictator, and command the situation entirely.' "

The plans were carried out to the letter. On the day before the meeting—in May, 1854—Mr. Stuart, with Dr. Sims in tow, visited all the leading newspaper editors in New York, beginning with Horace Greeley, and got permission from every one to insert a notice of the meeting. In spite of a hard rain, the hall was almost filled. After Dr. Sims had spoken on the necessity for a hospital for women, a committee was appointed to carry out the plan for establishing such a hospital.

After the medical profession's public endorsement of the hospital, Mr. Stuart's next step was to have Dr. Sims interview a number of the leading women of the city. By dint of dogged perseverance, and in spite of the undercover opposition of Drs. Watson, Buck and Company, Sims finally saw his dream come true. In May, 1855—two years after he came to New York, and one year after the Stuyvestant Hall meeting—the Woman's Hospital was inaugurated at 83 Madison Avenue. Sims said that the hospital "from the day it opened had no friends among the leaders—among hospital men. I was called a quack and a humbug, and the hospital pronounced a fraud. Still it went on with its work. Its wards were open to any doctor that cared to come, and the operations performed there were seen by most of the leading medical men in the city, and many others from different parts of the country."

When the hospital was opened, Dr. Sims was still far from well, and could perform only one operation a day at first. Within six months, however, he had gotten rid of his malady for good, after being plagued with it for six years, and was so busy that he had to have an assistant. Dr. Thomas Addis Emmet was chosen for the position.

From this time on the story of Sims's life is more cheerful. He soon was having all the private practice he could do, his health remained good, and his fame continued to spread. The Woman's Hospital soon had to be enlarged, so another building, occupying a whole block, was erected between 49th and 50th Streets and Lexington and Fourth Avenues.

In June, 1861, Sims made his first trip abroad—partly for rest, partly to investigate hospital treatment in Europe. In Dublin, Edinburgh, Aberdeen, London and Paris he was welcomed heartily. Over and over again he performed his famous operation for vesico-vaginal fistula when suitable patients could be found, while the greatest surgeons of Europe watched him. One often hears an athlete extolled for keeping his nerve in a gruelling competition or before a crowd of spectators; but can one

imagine any athlete exhibiting more coolness under pressure than did the little South Carolinian who became a doctor because he was too timid to be a lawyer or preacher?

In London he had his first fatality from his operation for vesico-vaginal fistula, after having performed it hundreds of times. This, he tells us, was due to the ureters' having been closed by the suture. A second fatality occurred in Brussels later. The post-mortem revealed that the nurse had driven the catheter through the posterior wall of the bladder into the peritoneal cavity—"an accident which would not have happened in the hands of an ordinary nurse accustomed to such cases."

The results obtained by Sims, before the days of antisepsis or asepsis, were remarkable. Surgeons tell me that the vaginal mucous membrane is highly resistant to infection following operations; but Sims also did abdominal surgery.

To digress a little: Dr. Hall, I am sure, remembers with what awe we interns at the old Philadelphia Polyclinic witnessed the technique of the late B. F. Baer and how we marveled at the results he got in spite of this technique. Most of us, I believe, came to realize that the gentleness with which he handled tissues, the speed with which he operated, and the common sense after-treatment made up to a great extent for his total disregard of the comparatively new science of bacteriology. Robert T. Morris[3] reminds us that "Lawson Tait had presented better statistics than any other abdominal surgeon in the world, at a time when some of us were enthusiastic over antiseptic surgery and he was railing at it . . . he was conserving the natural resistance of his patients through rapid operating and the infliction of a small degree of surgical injury."

Sims returned to New York in January, 1862; but the Civil War was getting well under way, and life in New York for a Southerner was so unpleasant that he recrossed the Atlantic with his family, to stay for the duration of the war. He was so well known now that he had no trouble in making a good living in London and Paris. He stayed for six years, and during this period had among his patients many members of the aristocratic and royal families. One of his patients was the Duchess of Hamilton, who in 1863 "gave me a beautiful chateau to live in, ready furnished, one which had never before been occupied by any but royalty; and here I took up my abode for the summer." Here he wrote his book, "Clinical Notes on Uterine Surgery." Of this work Dr. Thomas Addis Emmet wrote: "Its publication was the turning point of modern gynecology, or more strictly speaking American gynecology, of which he may justly be termed the father."

Sims's own story ends in 1863 while he and his family were still abroad. He lived twenty years longer, however, and reaped many rewards of his hard work and his genius. Only a few highlights of his later career will be given.

In 1870, during the Franco-Prussian War, he returned to France, where he organized the Anglo-American Ambulance Corps, and was made its Surgeon-in-Chief. He rendered such distinguished service, especially in connection with the battle of Sedan, that the French Republic conferred on him the Order of the Knights of the Legion of Honor. As a result of this military experience he wrote ten years later a paper on the treatment of abdominal wounds which, according to surgeons like Dr. Hubert Royster[4] and Dr. Irvin Abell,[5] placed the treatment of injuries of the abdomen on a modern basis —at least until the advent of the sulfonamides.

In 1874 there came a disheartening experience. With the attitude of omniscience so often assumed by laymen who have occasion to deal with medical matters, the Board of Governors of the Woman's Hospital ruled that no more cancer patients should be admitted to the hospital, and that the number of spectators at any one operation should be limited to fifteen. This number, the Board decided, was the limit that could be tolerated by the modesty of woman. The facts that the woman was soundly anesthetized, and that the visitors were all medical men, were not taken into account, nor do we know why fifteen was selected as the limit of tolerance. In vain Dr. Sims, at the next annual meeting of the hospital officers, eloquently plead for the patient with cancer, and protested against limiting the number of visitors on the ground that it interfered with the teaching function of the hospital and that it invaded the rights of the physician. When the Board was obdurate, he did the only thing a self-respecting doctor could do, and resigned from the staff of his own hospital.

Two years later, in 1876, he was elected president of the American Medical Association, and in

XUM

1880, of the American Gynecological Society. In 1881 he was called to attend President Garfield after he was shot by an assassin. That same year his Alma Mater, Jefferson, bestowed upon him the honorary degree of Doctor of Laws.

He died, quietly and without pain, on November 13, 1883, after a full day's work.

In 1894 a statue was erected to his memory in Bryant Park, New York; later this was moved to Fifth Avenue at 103rd Street—opposite the New York Academy of Medicine.

Among the honors conferred upon Sims the Cross of the Legion of Honor from France has been mentioned. He was also a Fellow of the Royal Academy of Medicine in Brussels, a Fellow of the Royal Obstetrical Society of London, an honorary member of the medical societies of Edinburgh, Brussels, Belgium, Berlin, Christiania, Paris and Dublin. He was given the Iron Cross of Germany, the Order of Leopold I of Belgium, and was decorated by the governments of Italy, Spain, and Portugal.

Besides his book, "Clinical Notes on Uterine Surgery," and his autobiography, he left behind about eighty articles on various medical and surgical conditions.

While it is gratifying to know that a Southerner—a son of South Carolina, a great-great grandson of Virginia—attained such heights, it is equally gratifying to know that he remained unspoiled by all the honors and the adulation heaped upon him, and that he obtained his greatest satisfaction from his home and friends. In writing of Trousseau, who was recognized as the leading doctor of Paris, and who had everything to make him happy except for his home life, he recalled the words of a New York minister who had said that Dr. Sims, because of the relief he brought to so many suffering women, ought to be the happiest man in the world. Sims later thanked the minister for his kind words, but added: "Your conclusion that I was one of the happiest men in the world was correct, but your premises were not. I am one of the happiest men in the world, but it is not because I cure these poor people who would never have been cured but for my labors and my discoveries and inventions. It is because I am happy at home."

To the end he retained his simple, childlike faith in God. The letters to his wife which his son included with the autobiography are naturally more self-revealing than the more formal part of the story. A letter to her, written from Paris after one of his greatest surgical triumphs, gives such an insight into the very soul of the man that I shall close with an excerpt from it.

"Not only now, but often while I sit in the midst of the decorated *savants* of this great city, my thoughts turn instinctively to the wife of my bosom, who, as the mother of my children, is a thousand times dearer to me than she was in the spring-time of life, as the playmate of my childhood and the idol of my youth. To your gentle care and loving kindness and wise counsels I owe all that I am, and I feel that, with all my successes, all my triumphs, with the prospect of lasting fame, I am far, very far from being worthy of you; for when I have told you thousands of times that you were too good for me I have been in earnest. But while I feel a secret, unexpressed gratification at the extraordinary result of my visit here, which would not have been made but for your persistent entreaties, let us not forget the great Author of it all. I have done nothing, but have been led along, I know not how, and have followed blindly, confidingly, and patiently. Nothing has been done just as I would have had it, but all has turned out, or is turning out, better than I could have devised."

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RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE IN VIRGINIA*

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For several centuries the term "rheumatism" has been used to designate joint pains and deformities of various types. Gradually "rheumatism" has come into use in connection with polyarthritis, often associated with systemic disease. It was not until the late eighteenth century that it was learned that "rheumatism" or rheumatic fever affected not only the joints, but also the various structures of the heart. It is a very unfortunate fact that until rather recently text-book descriptions of the disease stressed the adult type of polyarthritis with marked joint signs and symptoms. Thus attention was diverted from the most important features of the disease, namely, the mildness of the joint symptoms, the involvement of the heart in nearly every case, and the marked tendency toward recurrence and chronicity.

As rheumatic fever is a reportable disease only in Denmark, Iceland, and Norway, there are no accurate data concerning the general incidence of the disease. However, certain statistics are interesting. Atwater and Swift have estimated that there are about 170,000 cases of rheumatic fever per year in the United States. From his studies Paul estimates that there are about 840,000 cases of rheumatic heart disease, active and inactive.

It is generally accepted that rheumatic fever and rheumatic heart disease have a definitely higher incidence in the colder climates. Two and one half per cent of 4,853 cases admitted to Children's Hospital, Birmingham, Alabama, were definitely diagnosed as rheumatic fever or rheumatic heart disease. However, arthritis in a severe form was rare and arthritis of a mild degree occurred in only a moderate proportion of the cases. Dublin, of the Metropolitan Life Insurance Company, states that death from rheumatic fever alone, between five and nine years, is outnumbered only by those of the four principal communicable diseases of childhood and is greater than that for pneumonia.

Wood *et al* a number of years ago reported that of 300 cases of organic heart disease seen by them in Virginia, 22 per cent were of the "rheumatic" type. Hedley found that in Virginia from 1922 to 1936, the mortality rate from heart disease between the ages of five to twenty-four years was 11.2 per 100,000. We agree with Dr. Hedley that with a rare exception all of these cases are rheumatic heart disease since congenital heart deformities are not listed under heart disease, and since syphilitic, hypertensive, and arteriosclerotic (coronary) heart disease rarely cause death prior to twenty-four years.

In 1940 one of us (Dr. Louise Galvin) made a survey of certain groups of children in Richmond through the Rheumatic Fever Program of the Crippled Children's Bureau. We wish to present the findings, but hasten to add that the data presented serve to give only a general, rough idea of possible heart disease and are in no way considered scientifically accurate. 979 children were examined, and of the 466 white children 11 or 2.3 per cent presented findings indicative of organic "difficulty", whereas of 513 colored children examined 45 or 8.5 per cent presented such findings. Due to certain conditions which we do not think it necessary to go into at this point, practically all of the cases we have seen at the Rheumatic Fever Clinic and/or in the Medical College of Virginia Hospitals have come from Richmond and the three surrounding counties.

From May 1, 1940, to July 1, 1942, we have seen 254 cases referred to us because it was thought that the child possibly had some type of rheumatic fever manifestation, rheumatic heart disease, or rarely congenital heart disease. Of the 254 cases, we made a definite diagnosis of rheumatic fever or heart disease in 97 cases or 34.2 per cent. The diagnosis of possible and potential heart disease was made in 53 or 20.8 per cent of the cases. Thus, 150 or 55 per cent of the cases seen in this special clinic were considered to have either definite rheumatic fever, rheumatic heart disease, or possible and potential heart disease. During this period of time the aver-

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age number of children under our care (not including rheumatic cases on the regular Medical College of Virginia Hospital services, or private practice) suffering from active rheumatic fever has been 54 per month. During the year 1940 the total admissions to the Medical College of Virginia Hospital Division, all ages, were 10,491, and of this number 91 cases or .86 per cent were diagnosed as rheumatic fever or heart disease; for the year 1941 admissions were 12,477, and 102 or .81 per cent were diagnosed as rheumatic fever or heart disease.

Neither the cases of definite rheumatic heart disease, nor the so-called typical rheumatic fever present a really difficult problem. But we do have difficult and very important problems in trying to arrive at a correct diagnosis in cases of border-line rheumatic fever, and of border-line inactive rheumatic heart disease, and last, but in our opinion most important of all, in determining whether or not a given case of rheumatic fever, with or without demonstrable carditis, is in the active or inactive state. We are all familiar with the text-book type of case of acute rheumatic fever. Thus, a child, or less often a person in young adult life, will develop a rather sudden acute infection with painful, swollen, tender, reddened, inflamed joints. Accompanying the arthritis there will be fever, sweating, weakness, malaise, anorexia, nose bleeds (at times), rapid heart rate, systolic and diastolic murmurs, enlargement of the heart, and in a short time anemia and loss of weight. The initial attack may start with the typical nervousness and choreiform movements of chorea or Saint Vitus Dance.

The clinical course of any given case may vary a great deal; however, we wish to emphasize here and later on that it is extremely important to realize that in rheumatic fever, probably better called the "rheumatic state" or "rheumatic infection", the period in which there is obvious evidence of an active infection with arthritis may be very short. But let us not be lulled into a sense of false satisfaction or security. Such a case may run a chronic or subchronic course and turn up 15 or 20 years later with enlargement of the heart, mitral stenosis and auricular fibrillation, indicating typical advanced chronic rheumatic heart disease.

It is our impression, as it is of others, that the manifestations of rheumatic fever here in Virginia are often very atypical and are mild and indefinite. Yet, despite these mild manifestations, we might say perhaps because of the atypical course of the disease here, many cases developed severe unequivocal rheumatic heart disease in later life. We feel that it is very important to look for these atypical cases and even if a definite diagnosis of rheumatic fever and heart disease cannot be made, it is better to treat such cases as rheumatic fever. Without attempting to present any statistics as to the frequency of occurrence of various signs and symptoms among cases seen in our Rheumatic Fever Clinic, we should like to point out certain things we believe are important. Much more often than not the children that we see with suspected or even definite rheumatic fever are not acutely ill. The mother may give a history somewhat as follows: Following a sore throat, but not necessarily so, in about two weeks the child begins to feel badly, lacks its usual energy and tires out quickly. He was found to have a little fever, possibly 101° or 102° Fahrenheit for a few days; this came down to 100° and stayed there. He complained of some pain in his ankles or knees for several days; then this disappeared and there was some stiffness of the joints. He may notice some loss of weight, pallor, and unusual sweating. Further questioning may bring out loss of appetite with rather frequent gastro-intestinal upsets, with pain and vomiting. We have the impression that the initial attacks as well as recurrent bouts of rheumatic infection are very often ushered in by gastro-intestinal upsets with pain and vomiting. This is particularly true in colored children. These children are unfortunately at times operated upon for supposed appendicitis. Nose bleeds, not the ordinary traumatic ones of childhood, definitely occur more frequently in "rheumatic" children than in normal children. We routinely inquire concerning nose bleeds at each visit, just as we do concerning sore throat, colds, and joint pains.

On examining such a child, we may, or may not, *more often the latter,* find some swelling of ankles, knees, or wrists, with a little tenderness on pressure and a little pain and stiffness on motion. He appears underweight and almost always anemic. His temperature may be around 100° to 101° Fahrenheit per rectum and his heart rate elevated out of proportion to the fever, being around 100 to 120 at rest. The heart sounds are hyperactive and various

types of murmurs may or may not be found, depending upon whether or not this is the initial attack and how much cardiac involvement is present. Certain laboratory procedures are of help in doubtful cases. A leucocytosis and an increased sedimentation rate of the red blood corpuscles almost always indicates an active rheumatic infection. An elevated sedimentation rate may be delayed two weeks to two or three months. There are certain changes in the electrocardiogram, especially a prolonged P-R interval, indicating a partial heart block which may be present to help us in our diagnosis. However, a normal electrocardiogram may be present in a heart that is definitely damaged.

We would like especially to emphasize that because of the protean manifestations of rheumatic fever and of the lack of any absolute diagnostic laboratory procedures, we at times have to see equivocal cases repeatedly over long periods of time before arriving at a final positive diagnosis. Because of the nature of the disease, and certainly in the absence of acute polyarthritis or chorea, the final decision will have to await the development of evidence which we consider to indicate rheumatic heart disease, mitral stenosis being the example par excellence. However, if there is strong presumptive evidence that we are dealing with rheumatic fever and other diseases have been excluded, we should like to emphasize again that the child should be treated as having definite rheumatic fever.

Rheumatic fever is a chronic disease, characterized by recurrences. The duration of the rheumatic infection or of rheumatic fever varies a great deal. The active stage may persist for weeks, months, or years. As stated before, it is very difficult at times to determine whether or not a given case is in the active phase. Just as it is important to keep cases with activity at rest, it is important to let cases without activity, even if they have definite heart damage, live as nearly a normal life as they can. Some of the points regarding activity have been covered above; however, we would like to emphasize a few more. We consider as abnormal a rectal temperature above 100° Farenheit. Persistence of fever in the absence of any other cause should make us suspicious of rheumatic fever. The joint signs and symptoms may be very mild and present only in the beginning of the disease, or may recur from time to time. A resting pulse above 100 is considered abnormal and should be carefully investigated and considered as evidence of activity in a known rheumatic. Erythemas are not common in our experience and neither are subcutaneous nodules. However, we occasionally see subcutaneous nodules, and they are generally associated with a severe infection. We have found the weight chart to be of great help and believe that a progressive gain in weight indicates a subsidence of the active phase. Congestive heart failure in a young patient with rheumatic fever practically always indicates a definite activity of the infection, and, furthermore, is a serious prognostic factor. Jones and Bland consider true Sydenham's chorea as "a mild manifestation of rheumatic fever and one in itself not especially conducive to the development of rheumatic heart disease". In the past chorea itself has been considered practically as serious as rheumatic fever with polyarthritis.

From the practical viewpoint we believe that the leucocyte count and the sedimentation rate are the best laboratory procedures. We prefer both tests, but believe, if only one is available, that generally the sedimentation rate gives the greatest amount of information. We use the corrected sedimentation rate.

Without going into the details of treatment in each stage of the disease, we should like to present some of the general principles of treatment of the various phases. In the active phase of the disease, absolute bed rest with an easily digestible high caloric diet is essential. If the patient presents symptoms or signs of joint involvement or of pericarditis, salicylates in adequate dosage are often of great help. If there is evidence of heart failure, usually of the right side but not of the left side, we believe, as do White, Sprague, and Jones that the xanthin and mercurial diuretics along with digitalis should be properly used. In this stage of the disease, if additional medications are tolerated, vitamins and iron are also indicated. After the patient has passed the acute active stage, but is still convalescing, we continue moderated bed rest, vitamin therapy, and iron as indicated. We believe that cod-liver oil, vitamin B in its various varieties, and vitamin C are especially indicated. We might add here that in chronic infections vitamin C seems especially indicated, and that, furthermore, in rheumatic fever

XUM

it seems to have an almost specific effect in preventing nose bleeds, possibly by correcting the capillary permeability. When the patient has reached the inactive stage, and whether or not the patient has definite heart damage, we try to emphasize the necessity of periodic examinations, the avoidance of any infections, particularly respiratory ones, and the special care of these infections, the avoidance of competitive athletics, and any and all forms of exercise producing real fatigue. Finally, we emphasize the great importance of care regarding personal hygiene, and the keeping of one's self in the best of health.

DISCUSSION

DR. LOUISE GALVIN,* Richmond: In connection with the paper which Dr. Camp presented, I am glad of the opportunity to say something about chorea, since the paper quoted figures in connection with the importance of chorea as related to heart disease. It has been emphasized by Dr. T. Duckett Jones, and I agree, that heart disease in connection with pure chorea is rare. When a careful history is taken, however, we often find that there have been other evidences of rheumatic fever. In several cases, when we have gone into the history, we have gotten a history of other symptoms at an earlier period—nose-bleed, leg aches (in the calves, particularly), also stiffness and abdominal pains. A history of these things should make us very cautious in examining the heart. Many children will have leg pains, not localized in the joints, for months or maybe two or three years before they have definite localized joint pains; and these pains are probably due to synovitis of the hamstrings, Achilles tendons, etc., due to rheumatic processes. Often a history of leg pains is the only history that the mother will give you, and you have to ask to get the history of stiffness in the joints or pains in other joints, nosebleeds, abdominal pain, easy fatigue, etc.

DR. J. EDWIN WOOD, JR., Charlottesville: The paper of Dr. Camp and Dr. Galvin is of peculiar interest to me, as for some twenty years I have followed the general problem of rheumatic fever. The importance of this problem in the South has not been fully appreciated.

Although several theories have been offered relative to the cause of rheumatic fever none has been universally accepted.

There are some points of probable interest which Dr. Camp and Dr. Galvin did not have time to bring out. For example, much discussion has arisen with regard to the use of digitalis during the active stage of rheumatic fever with congestive heart failure. Some insist that digitalis has no value, is dangerous and should not be used. This is only partially true. There are instances of rheumatic carditis in which digitalis procures excellent results in the treatment of congestive heart failure. However, the heavy dosage so commonly employed by many of us relative to the usage of digitalis in other heart failure patients does not apply here, and the relatively safe rule of grs. 1 and ½ digitalis (U.S.P.) per ten pounds body weight should be followed with frequent observations for toxic effects.

Lately, from several sources, have come reports of control of rheumatic recurrences with small doses of sulfanilamide administered during winter to children in certain institutions. This method has its dangers and obviously would be impractical in the individual case. Happily, a still more recent article has indicated that the prevention of active rheumatic recurrences in certain juvenile institutions may be accomplished just as well with the continued administration of moderate daily salicylate dosage throughout the winter. The approach has promise for the individual case.

Dr. Camp and Dr. Galvin have reopened an important subject. They have stressed the insidious nature of this infection in the South. I hope their good work will lead to a program of adequate care and rest for the active rheumatic similar to that now enjoyed by the active tuberculosis patient.

DR. F. D. WILSON, Norfolk: I have enjoyed immensely this paper by Drs. Camp and Galvin. We do not have so much rheumatic fever in this section, though probably more than we recognize. But there is not nearly so much as there appears to be in the northeastern section of the country.

I think the present conception of rheumatic fever and endocarditis and chorea associated has enabled us to avoid many mistakes of diagnosis. There are some pitfalls, however, which I should like to bring out. First of all is the vagueness of the disease. Dr. Galvin spoke of leg aches. Mothers usually speak of "growing pains". Growing pains following upper respiratory infection, whether simple coryza or tonsillitis, should lead us to suspect rheumatic fever. If we do, we shall avoid missing some cases.

The age incidence is interesting because it is unusual to find rheumatic fever up to five years of age, and it is very rare up to three. The rheumatic nodules I have seen very rarely. They may be more common, but I have been unable to find them.

Swellings of the joints are so fleeting that they are often passed unnoticed. Often you will see a child with pain in one joint only, and you do not see the jumping about from joint to joint that you see in older people. The swelling is evanescent; it stays a day or two and is gone. Any pain—growing pain—in a child should lead you to suspect the disease. Redness is rare, and also swelling, as I have said. Tenderness, even if not persistent, should lead you to suspect the disease.

There is one thing I think almost all of us are negligent about, and that is in not keeping our patients in bed longer. As soon as they get over the pain and the temperature falls we are apt to want to get them up. I

*Asked by the President to discuss the paper.

am one of those who believe that rheumatic fever patients should never get out of bed under six weeks. I believe the endocarditis cases should never get up in less than ninety days, and often six months or longer. Some of my endocarditis cases have had to stay in bed a year or longer. I believe that is where we do the great damage; we let them get up too soon. I believe we should emphasize the necessity of keeping the patient in bed until he is entirely well, as indicated by his blood picture.

DR. CAMP, closing the discussion: I want to thank the doctors who have very kindly discussed the paper and to say once more that we simply wanted to bring before you the fact that we do have rheumatic fever here in Virginia. It is usually of a mild type. As Dr. Wood said Dr. Hutcheson said to him, we do not know how much good rest does, but it is certainly the best thing we have to offer these patients; and I think the time will come when we shall have an institution for them, just as we have for tuberculosis patients in this State. We have one case who has had active rheumatic fever for four years, and we have a number of them that we have kept in bed for from one and one-half to two years.

We occasionally see a rash as one of the evidences of reactivity; and in the camps, where men have been gathered together in large groups, it has been brought out again that following hemolytic streptococcus throat infections they are apt to have recurrences or initial attacks of rheumatic fever.

Medical Officers Needed for Federal Civilian War Service.

The critical shortage of physicians to engage in vital war work in the civilian branches of the Government continues. The great need for these men resulted in the announcing of a liberalized civil-service examination for Medical Officers in 1941. The Civil Service Commission has just revised and re-announced this examination.

The twenty optional branches under which doctors may apply range from General Practice to Aviation Medicine. Those appointed will perform professional duties as doctors of medicine in active practice in hospitals, in dispensaries, or in the field or in rural areas; or in bureaus of the Government such as the Veterans Administration, Civil Aeronautics Administration, Public Health Service, and Food and Drug Administration. Doctors will also be used in industrial establishments under dlirection of the War Department.

Applicants for all grades must have received the degree of M. D. from an accredited medical school. Applicants for the Senior Medical Officer grade ($5,228 a year) must have at least 5 years of appropriate medical experience; for the Medical Officer grade ($4,428 a year), 3 years of experience in addition to a required interneship; and for the Associate Medical Officer grade ($3,828) 1 year of interneship. The salaries quoted include overtime pay.

There are no written tests and no age limits. Persons now using their highest skills in war work should not apply for these positions. Appointments in Federal positions are made in accordance with War Manpower policies and employment stabilization plans. Before a definite offer of appointment is made, eligibles are cleared through the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, of the War Manpower Commission.

Persons rated eligible on the Medical Officer examination of 1941 need not file applications again unless they consider that they now possess qualifications for eligibility in a higher grade or different option.

Further information and application forms may be obtained at first- and second-class post offices, Civil Service Regional Offices, and the Commission in Washington, D. C.

XUM

THE INDUSTRIAL DEVELOPMENT OF VITAMINS OF THE B COMPLEX

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It has been said that the most significant problem in nutrition, from the point of view of national fitness, is in the chronic malnourishment observed among people in every walk of life; the malnourishment due to a lack of the proper kind and quality of foods which makes for hidden hunger, lessened vigor of mind and body, a low level of resistance to disease, and a shattered capacity for bearing the burdens of everyday life. This nutritional unfitness was observed in many of the young men rejected in the draft.

The data from careful dietary surveys show that there are large numbers of people in the United States who live on diets which do not contain enough vitamins, particularly those of the vitamin B complex. From the point of view of preventive medicine, the evidence is conclusive that there is a great opportunity to improve the health of the nation by increasing the vitamin B complex content of the diets of a considerable part of our population. This evidence has recently been confirmed in a Gallup poll conducted by the American Institute of Public Opinion. A record of the principal foods eaten by representative adults in all states was compared with the list of essential health foods widely recommended by the Bureau of Home Economics. Certain geographic sections were shown to have dietary habits in which there were pronounced deficiencies.

The several hundred delegates who attended the Washington Nutrition Conference in 1941 were aware of the necessity and opportunity to improve the nation's diet and were conscious of the losses in vitamins in the American diet due to wasteful practices in the consumption of milk; the lack of fruits and raw greens in the diet; the increased and excessive consumption of sugar; and the decortication of grains by modern milling methods which reduce the riboflavin content to 1/3, the niacin to 1/5 and the thiamine content to 1/7 of the original values. Consequently, these delegates approved recommendations relating to requirements to good nutrition submitted by the Food and Nutrition Board of the National Research Council. This "Washington Nutrition Yardstick", as it was aptly termed by the British nutrition expert, Sir John Orr, recommended as a daily allowance for a moderately active 150 pound man geared to 3000 calories per day, 5000 I.U. vitamin A, 75 mg. vitamin C, 1.8 mg. vitamin B_1, 2.7 mg. vitamin B_2, 18 mg. niacin, 0.8 gm. calcium, 12 milligram iron and 70 grams of protein.

The relative ease and low cost of production together with high content of energy-yielding nutrients, have elevated cereal grains, rice and corn to a high place in the diets of peoples whose civilizations are based on agriculture. Today, wheat alone provides more calories for the English speaking world than any other food. The essential vitamins and minerals originally present in cereal grains which are removed in milling and baking processes can be readily re-introduced. Thus, in consideration of the above views of deficiencies in vitamins and opportunities for improvement of the diet, the enrichment of flour and bread has now become a matter of government regulation. Today, according to the Food and Drug Administration standards, enriched flour, from January 1, 1942, "must contain in each pound not less than 1.66 milligrams of vitamin B_1 (thiamine), not less than 6 milligrams of nicotinic acid or nicotinic acid amide, and not less than 6 milligrams of iron". Again, according to Food Distribution Order No. 1 issued by Secretary of Agriculture Wickard, from January 18, 1943, all white bread must be enriched. Furthermore, a proposed order was issued by the Food and Drug Administration on June 4, 1943, which would amend the above requirements for enriched flour to read as follows, "contains in each pound not less than 2.0 milligrams and not more than 2.5 milligrams of thiamine, not less than 1.2 milligrams and not more than 1.5 milligrams of riboflavin, not less than 16.0 milligrams and not more than 20.0 milligrams of niacin or niacin amide, not less than 13.0 milligrams and not more than 16.5 milligrams of iron (Fe)."

Of the total annual consumption of more than 105,000,000 barrels of flour, it has been conservatively estimated that the United States requirement for enriched flour is at present in the neighborhood

of 40 per cent. The proposed standards for enrichment call for a minimum content of 2/5 g. of thiamine, 1/4 g. of riboflavin and 4 g. of niacin per 196 lb. barrel of flour and, consequently, for more than 16,000 kilos of vitamin B_1, 10,000 kilos of riboflavin and 160,000 kilos of nicotinic acid per annum. These quantities are still further extended by the necessity for the fulfillment of requirements by the war-stricken peoples of the Allied Nations. These demands for vitamins in the order of tons and hundreds of tons are so stupendous that a brief consideration of the methods of synthesis of the vitamins of the B complex and the various problems involved in their commercial development may be of more than passing interest.

The isolation, identification and synthetic reproduction of the chemical entities we know as vitamins are processes which follow a more-or-less routine procedure. But between the laboratory synthesis and production on a commercial scale there is a "great gulf fixed". The laboratory synthesis may have employed extreme conditions of temperature and pressure, and have been carried out in complicated apparatus with the aid of rare and expensive reagents and catalysts. The elaboration of the small scale batch process of the chemical research laboratory requires the services of a chemical engineering laboratory to introduce gradually the process into pilot plant operation. From temperature, pressure, corrosion and other observations and from experimental equipment studies made in such a laboratory, the chemical engineering designers are able to draw the blueprints for factory buildings and installations so that ultimately an economical large-scale continuous production of the vitamin becomes a commercial possibility.

The actual commercial development of the synthetic production of the vitamins of the B complex was initiated by an event only distantly related to this particular family of vitamins. By a chain of fortuitous events, it had become possible to synthesize the hitherto rare ascorbic acid from glucose by a simple set of chemical and biochemical reactions and, in 1934, to introduce synthetic vitamin C commercially. A gradual realization that increasing commercial demands for this material was capable of supply by a synthetic material made from glucose gradually brought into being a fresh concept as to the nature of the scarcely-known vitamins. It began to be apparent that, after all, the vitamins might turn out to be substances capable of economic synthetic commercial production—a probability that the previous history of the better-known but non-synthesized oil-soluble vitamins had done little to foster—a probability that has become an astonishing reality. The early commercial supplies of vitamin C were little more than a scientific novelty and were sold to the trade in ounces. Its use in the beverage and related food industries gradually increased so that today, under General Preference Order M-269, the sale of vitamin C in the U. S. A. is governed by priority ruling to control the estimated production of 6 million lbs., a figure that may reach 8 million in 1944, a decade after its introduction.

Following the successful introduction of vitamin C, Merck & Co., Inc., began their collaboration with Dr. R. R. Williams that was to lead to the now familiar but still brilliant synthesis of vitamin B_1. As a result of several years of intensive work, aided by the introduction of quinine salts for elution of the vitamin from fullers' earth used as an adsorbent, and by control of the progress of isolation by curative tests on polyneuritic rats, Williams and his co-workers were able to devise a method for securing consistent yields of the antineuritic vitamin hydrochloride of approximately 5 grams per ton of rice polishings. By processing tons of rice polishings in large scale commercial equipment, sufficient of the precious natural vitamin in the pure crystalline state was obtained to permit the continuation of the analytical studies that had already shown the ready cleavage of the vitamin into pyrimidine and thiazole portions, and to facilitate the investigation and ultimate successful synthesis of the pyrimidine moiety and of the vitamin itself. The culminating stage of final successful commercial synthesis was soon accomplished so that, today, the enormous demands for this pure crystalline product can be readily met and satisfied.

The vitamin theory of Funk had postulated the existence of various deficiency diseases, including rickets, scurvy, beriberi and pellagra. Previous to 1920, the antiberiberi vitamin factor had been related to the water-soluble B factor of McCollum and Davis and, consequently, designated as vitamin B. The work of Smith and Hendrick in 1926

XUM

showed the presence of both growth and antiberiberi factors in the so-called vitamin B extracts. Thus, when Goldberger further demonstrated that these extracts from liver, yeast and other food sources also contained an antipellagra factor, confusion originated and it was not until recently that the tangles of the so-called vitamin B complex have been straightened out. The confusion has been cleared up, due mainly to work on related fields on growth factors and to broader concepts as to the biological function of the vitamins. The many investigations of the growth-stimulating factors contained in sterile decoctions of yeast, termed "bios" by Wildiers in 1901, have led to the recognition of vitamin B_1, B_6, biotin, pantothenic acid and inositol as well-established members. Growth factors for other microorganisms include, in addition to these named, vitamin B_2, nicotinic acid, folic acid, p-aminobenzoic acid and choline—all of which occur in vitamin B extracts. It seems, therefore, probable that all these compounds, which are growth factors for microorganisms, may function as vitamins for animals and that they all play a vitally important part in life processes. Many of these compounds were previously well-known chemical entities. The use of their long-established names and the adoption of other names such as thiamine, to replace previous nomenclature with therapeutic indication, is rapidly rendering obsolete the terminology, vitamin B_1, B_2, B_6, etc.

Historically, the scientific study of riboflavin traced its course for many years independent of the concurrent vitamin investigations. The chemical nature of this water-soluble, yellow-green fluorescent pigment of whey attracted the attention of Blyth in 1879, and its more obvious properties were described by Bleyer and Kallman in 1925. In 1932, Warburg and Christian described a new oxidation enzyme whose prosthetic or chemically active grouping was a pigment component, which in irradiation in alkaline solution and consequent acidification, gave the yellow chloroform-soluble lumiflavin which was also readily obtained from the relatively heat-stable pigment of whey. Three different laboratories in 1933 reported on the relationship and probable identity of the water-soluble yellow-green fluorescent pigments—the lyochromes of milk, liver, egg-albumen, etc.—with the growth-producing vitamin B_2. For these pigments Kuhn and his co-workers suggested the group name, flavins. Further investigation showed the common occurrence in many natural source materials of an identical flavin with maximum vitamin potency—the riboflavin of the vitamin B complex.

The pioneering work of Kuhn on the structure of riboflavin showed its close relationship to lumiflavin and proved it to be a *d*-ribose derivative of isoalloxazine. Various laboratory syntheses were devised but only by immense labor and infinite pains and trouble has it been possible to fashion a suitable commercial synthesis capable of supplying today's enormous demands for this vitamin so essential for nutritional purposes.

Funk originally listed pellagra among the deficiency diseases, and, in the United States, as early as 1915, Goldberger and his collaborators suggested that the lack of certain dietary constituents might play an important role in the development of pellagra, but it was not until about 1926, when it was found that the thermostable portion of vitamin B had pellagra-preventive properties, that serious search for this factor began—an investigation hampered by failure to distinguish between human pellagra and apparently similar forms of dermatitis in rats and chicks. Gradually, it became realized that black tongue in dogs was analogous to human pellagra and investigation of this disease, which was alleviated by liver extracts, led to the demonstration, in 1937, that synthetic nicotinic acid would cure black tongue in dogs. The isolation of nicotinamide (previously obtained from horse blood by Warburg and Christian in 1935) from liver was achieved by distillation of concentrates in a molecular still, and the amide was shown to be the effective liver factor curative of black tongue. Almost immediately, nicotinic acid (niacin) was successfully applied in the treatment of pellagra in human beings who usually suffer from multiple vitamin deficiency but whose characteristic symptoms are certainly due to niacin deficiency.

The work of György (1934-36) showed that the rat pellagra or dermatitis, at one time confused with human pellagra, could be cured by a factor present in yeast to which he gave the name vitamin B_6—a factor subsequently shown to be identical with the "yeast-eluate factor" of Macrae and co-workers. The disease resembles a particular disease of infancy

termed "pink disease" or acrodynia which is characterized, in the rat, by severe dermatitis on the extremities; the paws, nose and ears. In 1938, the vitamin was isolated almost simultaneously by a number of investigators (Lepkovsky, Győrgy, Kuhn and Wendt, Keresztesy and Stevens, Ichiba and Michi). In the course of a year, the structure of the vitamin was elucidated, and the vitamin itself was synthesized by Harris and Folkers of the Merck Research Laboratory.

The pellagra-like dermatitis in chicks bred under conditions of controlled deficiency is due, not to nicotinic acid deficiency, but to the lack of another vitamin of the B group which in the past was called the "chick anti-dermatitis vitamin" or "filtrate factor". Concentrates of this elusive vitamin were obtained in the laboratories of Elvehjem in Wisconsin and of Lepkovsky and Jukes in California, and by 1939 Elvehjem and his co-workers were able to show that the factor was liable to hot acids in alkalies and contained in its molecule beta-alanine and a hydroxy acid which was capable of ready lactonization.

In 1933, R. J. Williams and his collaborators had discovered an acidic substance of widespread occurrence which stimulates the growth of yeast. During subsequent years, Williams was able to concentrate this yeast growth factor which he called pantothenic acid and to obtain as a final product a calcium salt which he estimated to have a purity of about 90 per cent. Williams and his co-workers showed that pantothenic acid consisted of beta-alanine in combination with a hydroxy acid and almost simultaneously the Wisconsin and California workers came to the conclusion that the chick anti-dermatitis factor and pantothenic acid were one and the same substance.

For some time before this, research work on the chick anti-dermatitis factor had been in progress in the Merck Research Laboratory, and in the spring of 1939, the collaboration of R. J. Williams was obtained and a mutual interchange of unpublished data took place. The microbiological assay method dependent on the stimulation of the growth of microorganisms by pantothenic acid, developed by Williams and his co-workers, was invaluable in the investigations which led to the isolation of the lactone moiety of the vitamin molecule, the elucidation of its structure and finally to the synthesis of the calcium salt of the physiologically active acid.

The growth-factor biotin, which cures rats and humans of the skin disease known as egg-white injury and which had previously been identified as vitamin H and as co-enzyme R has now been synthesized. Its structural formula was recently announced by du Vigneaud and his co-workers at Cornell University Medical College. Known to have a cyclic urea linkage and a valeric acid side chain, further studies in collaboration with a group of workers from the Merck Laboratories, some of them thenic acid, confirmed by desulfurizing reductive determination studies of vitamins B_1, B_6 and pantothenic acid, confirmed by desulfurizing reductive cleavage that the fundamental ring structure was indeed a thiophene and that biotine is 2′-keto-3, 4-imidazolido-2-tetrahydrothiophene-valeric acid. Within a few months of this announcement of the structure, the Merck workers achieved the successful synthesis of this new member of the vitamin B complex.

In this brief account of the synthesis of the various members of the vitamin B complex, each stage in the progress of development from an obscure physiologically-active principle to the commercially available and well-established synthetic vitamin is illustrated. At one extreme has been pictured the large-scale synthesis of vitamin B_1, at the other has been noted folic acid, known only as an impure concentrate. Intermediate stages are represented by biotin, whose laboratory synthesis has just been accomplished, and by synthetic pyridoxine with its place in nutrition, as yet, undecided.

Other than the increased requisitions for vitamin A and vitamin D, the chief demands for vitamins in combating deficiency diseases are for thiamine, riboflavin, niacin and ascorbic acid. The vast requirements for these vitamins are being met, in part, by increased synthetic production whose economical progress is witnessed by the ever decreasing costs to the consumer.

The necessity and magnitude of the task of supplying synthetic vitamins is plainly apparent. The vitamin industry geared to this task owes its phenomenal growth to courageous planning and investment, to wise counsel and direction, to ingenious research and engineering and to the strenuous efforts of labor and management in close cooperation. These steadily expanding plants of the vitamin in-

XUM

dustry, with their large research divisions in up-to-date laboratories and their close cooperation with academic groups in related professions, bear witness to the intention of the American manufacturers of fine chemicals to play their part, in the present crisis and in the post-war world, in making available adequate supplies of the vitamins so essential to maintain the abundant health and well-being of the citizens of the United States and the myriads in the various countries of the United Nations.

Nurses Needed for the Armed Forces,

And, Doctor, you can help by encouraging private duty nurses to enroll for military service and by urging the layman to contribute toward winning the war by dismissing a private duty nurse as soon as the stage of convalescence has been reached.

Thirty-six thousand nurses are needed annually for war duty—30,000 for the Army and 6,000 for the Navy. The number required each month is 3,000 nurses, yet at no time this year has the quota been met.

Appointed by the Surgeon-General of the U. S. Army as the official nurse recruiting agency, the Red Cross is now asking the support of physicians in presenting the appeal to the members of the nursing profession whose presence in the amphitheatre of conflict is essential to the winning of the war. Enrollment is not obligatory. Nurses must be convinced of the need and encouraged to enter service. Doctors by giving their advice and counsel can help nurses to make their decisions.

The size of the Army in World War II is twice that of the last war, and there are six times as many military posts inside the United States and five times as many outside our territorial limits. Yet the increase of nurses is not nearly proportionate. In the last war 23,868 were serving; so far in this war approximately 30,000.

Tabulating the distribution of nurses in 30 representative states, it was found that nurses assigned to the armed forces came from the following groups: institutional, 68 per cent; private duty, 21 per cent; public health, 6 per cent; miscellaneous, 4 per cent; and industrial, 1 per cent.

Institutions have contributed most largely to the nursing personnel of the armed forces and it is now primarily the private duty class which must be released for military duty.

Nursing "as usual" cannot go on and civilian hospitals will be forced to operate under the strain of reduced staffs. Yet inventories reveal that there is a back-log of nurses who have yet to be called upon to fill in the gaps. In 1941 there were 13,753 inactive and available nurses; in 1943 the number has been increased to 23,009. In reverse ratio, the number of inactive nurses listed as not available has been reduced from 42,647 in 1941 to 29,124 in 1943.

Outside the patriotic motive, the inducements to enter the service are more attractive than ever before. Nurses go into the Army with the relative rank of second lieutenant and into the Navy with the rank of ensign. They receive a monthly base pay of $150 with "allowances" increasing the value to an estimated $216. Promotion to the higher ranks carries the same pay increases as in other branches of the services, and privileges and responsibilities are the same as for any military officer of comparable rank. Government insurance and retirement privileges are included.

Through nurse recruitment stations set up in every city of 25,000 population or more, the widespread facilities of the Red Cross have been used to carry the appeal to nurses and the public again and again. Now the Red Cross turns to the medical profession for its active cooperation in this all-important campaign.

We cannot be secure on the home front unless our troops have the best nursing care; we cannot be certain of victory unless the wounded have every chance to live.

ECTOPIC PREGNANCY: A REPORT OF 130 CASES

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Ectopic pregnancy is a fairly standardized subject. It is a familiar surgical emergency, whose successful handling is of constant interest, particularly to those of you who work, as I do, in a private hospital with a trained surgical staff. On this assumption, I present this report of 130 ectopic cases operated on at the Johnston-Willis Hospital.

Let us note at the outset that the large majority of the cases in this series were reported by our own staff physicians, who are all regular attendants at our weekly "Journal Club" meetings. These meetings have an average attendance of about 98 per cent. Everyone has the rotating privilege of participating in the agenda; so we know that all our members are continuously exposed to the teaching of good medicine—an opinion which I hope may be reflected from this report.

Ectopic pregnancy has long been recognized by our profession—for centuries, perhaps. However, the first authentic report of a case that I am able to find is that of John Bard of New York in 1859. Earlier dates could possibly be set—if one had an imaginative mind and much time for the investigation. Certainly, Lawson Tait was one of the first American surgeons to operate for this condition.

The incidence of ectopic pregnancy is difficult to set. Some estimate that at least 10,000 cases occur in the United States every year. This, with a mortality quoted at 4.46 per cent, is a serious indictment of present-day surgery. We must also remember that many more cases are doubtless overlooked —in the wholesale pelvic surgery now undertaken by all grades of surgeons, some of them without trained pathologists to check their material; also, the recorded statistics are from our best hospitals, not the work of those mediocre and inexperienced operators who are handling too much of today's emergency surgery. In Schuman's exhaustive study of all the admissions to Philadelphia hospitals, he concludes that the incidence of ectopic pregnancy is about one ectopic for every three hundred pregnancies admitted. This, of course, includes all the miscarriages and abortions that were recognized.

Surgical literature records about 95-98 per cent of ectopic pregnancies as tubal. The incidence of ovarian, interstitial and abdominal pregnancy is rare; and of such cases only one, a proven ovarian pregnancy, is recorded in our series. Tubal gestation may occur at any time during the child-bearing age. Schuman says that his average ectopic patient is between 24 and 33 years old. Schaffey gives 23 to 35 years as the usual age, which agrees with our own findings. White, parous women are predominant in the record; but it does occur in nulliparous patients just often enough to keep us aware of the possibility. Patients with previous tubal pregnancy are thought more likely to have a second occurrence. But only two known patients among our 130 cases had an additional extra-uterine pregnancy. Neither of these patients had children, so the other tube had not been disturbed at the first operation.

Many factors enter into the causes of ectopic pregnancy; it is not easy to determine the primary origin. Venereal infection is certainly the most popular etiology among students of the subject. Falk has stated that 95 per cent of his cases showed results of infection. This is certainly strong support of the infection theory. Falk substantiates his findings by the fact that Harlem has a high percentage of extra-uterine pregnancies, where the incidence of gonorrhea is also high, in comparison with Pennsylvania's Quaker settlements, where the young remain close to their mothers' apron-strings, and where both gonorrhea and extra-uterine pregnancies are rare. Litzenberg, on the other hand, writes that less than 10 per cent of his specimens showed positive pathology. How can cold figures be 85 per cent apart?

There are several recorded causes of ectopic pregnancy beside the infection above mentioned, which leads the list. Among them are: abnormalities in the tubes, inflammatory conditions, diverticula, decidual reaction in the tubular epithelium, obstruction in a tube caused by adhesions, tumors, and any abnormal interference with the passage of the ovum. Insufflation and use of uterine dilators are also reported causes of this condition. Ovarian cysts, pelvic inflammatory disease and threatened abortion should be eliminated by differential diagnosis. In

XUM

short, the patient's history, plus her laboratory findings will usually clarify our diagnosis.

The importance of making an accurate and prompt diagnosis of ectopic pregnancy is great, yet in no condition of the pelvis is an inaccurate diagnosis so often made. Litzenberg declares that "the most typical thing tbout an extra-uterine pregnancy is that it is a-typical"—a useful axiom to remember. Before rupture, the diagnosis is rarely made, the tube—so far—being as soft as an abdominal loop. When ruptured by the normal development of the abnormally placed ovum, we have—immediately—one of the most serious emergencies in the practice of surgery.

I recall that some years ago, when I had a service at a charity hospital, I operated on three extra-uterine pregnancies in one year that were referred to us by the same physician from an adjacent state. They were all sent in as "disease of the adnexa". Yet this is not a reflection on their physician; they were not severe cases, and in each case he was not called until the patient had already recovered from the significant first symptoms of pain and mild shock. I mention them to emphasize the possibility of failure to recognize this emergency, when the case is already an "old one", first seen in the treacherous interval between primary and secondary hemorrhage.

Sudden pain and shock, bleeding, with the history of a late or missed menstrual period, are the cardinal symptoms of extra-uterine pregnancy. Of these, the most common and dependable symptom in our series was pain, usually in the lower abdomen. In cases of profuse hemorrhage, where the diaphragm was irritated by blood, there was also pain in the shoulder from irritation of the phrenic nerve. Distention and tenderness were other frequent findings. If hemorrhage was significant, there would be a corresponding drop in hemoglobin and an increase in w.b.c. If we made a pelvic examination, some dark blood was usually found in the vagina, in contrast to red blood found there if the patient were aborting. The uterus was usually somewhat enlarged and presented a feeling of bogginess. Pressure against the cervix from any cause produced pain. A mass might be felt in the region of the tube; however, the size of the uterus on pelvic examination is not a dependable sign. Nor should one ever make a pelvic examination of a suspected ectopic patient, unless he is prepared to operate immediately. Pain, faintness, shock following lifting or coitus are significant and most important indications.

In our current series of 130 cases, the majority of them came from the city of Richmond and its vicinity. The most distant one traveled 250 miles. On arrival at the hospital, nearly all were operated on as soon as the diagnosis was made and blood obtained for transfusion. In the meantime we resorted to hypoclysis therapy. Here I would state that blood transfusion is the single factor which has added more than any other to the safety of operations for ectopic pregnancy. Blood is the life-saving measure in desperate cases, and should be given liberally. Transfusion, however, should be started at the *beginning of the operation*, not before, on account of its effect on the blood pressure, which, if raised, thereby would increase the hemorrhage.

One of our reported cases was given 2,000 cc. of blood, begun on the operating table, and 1,000 cc. in the next 24 hours. This patient's pressure was so low that the blood had to be forced into her vein. Of course, no record of her pressure could be made. Fortunately, the majority of ectopics entering our hospital are not in this serious condition. For such cases there may be little indication for transfusion unless there has been a distinct loss of blood. But for serious cases, we must be always on the alert and prepared to meet the grave emergency with this strong life-saving measure.

The operation for an ectopic pregnancy is safely performed in a short time by a competent surgeon. The decision for or against removal of the opposite tube depends on (1) the patient's desire for future pregnancy; (2) her number of children; (3) the patient's age and the condition of the remaining tube; (4) the patient's condition. If she has two or more children, we advice ligation or resection of the remaining tube. If she is approaching 40, and if there is any question of damage to the other tube, we remove or ligate it. But if the woman has no children and the remaining tube is apparently healthy, we do not disturb it. In this, as in certain other surgical series, we have followed no fixed rule, determining each case on its own merits, individually.

The appendix is not removed routinely in this operation. To some extent we remove blood-clots and free blood; but we make no attempt to get rid

of all present blood. And in no case is this blood used for transfusion.

An experienced anesthetist, who is a graduate in medicine, gives the general anesthesia which we use routinely in our cases of ectopic pregnancy. I mention anesthesia here, because of its importance in the case of the ill patient. Local and spinal anesthesia have no place in ectopic pregnancy.

It is interesting that in this entire series of 130 cases there was not a single serious complication. In the presence of free blood and clots, low resistance from loss of blood, and—certainly in some cases—infection in the tubes, we might have foreseen complications. But there were none. Such results point the question—whether time spent in the removal of clots and free blood, plus the necessary handling of the small intestine required in such enterprises, is of great value.

All of our ectopic cases have been white patients, representing the average woman between 23 and 35 years old in average circumstances in the city of Richmond and adjoining territory. The percentage of infection in the removed specimen was reported small by our pathologists; and we may note again that this report is from the laboratory of a private hospital, where one would expect a minimum amount of infection. Also in our series, the occurrence of a pregnancy in the tube was about equally divided between the right and left tubes.

The one fatal case in the series deserves a detailed report:

Mrs. C. entered the hospital in shock. She had been transported about 45 miles. Her family physician had given her supportive measures with little improvement. Her w.b.c. was 18,000; hemoglobin 55 per cent; polys. 88 per cent. She was given immediate hypoclysis support, and showed definite improvement after a few hours. Plans for the operation were under way when the resident reported the patient's condition as rapidly changing for the worse. We operated immediately. A very profuse hemorrhage was found and controlled; but blood was not available for a transfusion. The patient died twenty hours after operation.

The great lesson in this case is two-fold: first, when a patient's condition improves and becomes somewhat stabilized from the primary hemorrhage, the operation should *then* be carried out; second, the *secondary* hemorrhage is far more serious than the first one. I believe, however, that if blood had been available, this, our one fatal case, would have survived.

To summarize: In this series of 130 cases of ectopic pregnancies admitted to Johnston-Willis Hospital, we note the importance of early recognition of a serious surgical emergency; we urge the liberal use of blood transfusion in cases with severe hemorrhage, and close supervision of every patient during the post-operative period. These, I think, are the factors responsible for a mortality as low as eight-tenths of one per cent (.8%) for the above series.

Books for Russian War Relief Needed.

Russian War Relief, which is sending American medical textbooks to Russian schools training surgeons and doctors for the front lines, has issued a new appeal for contributions of medical literature.

The appeal was in response to requests from the Russian Society for Cultural Relations with Foreign Countries. Russian officials point out that many Soviet schools of medicine were evacuated thousands of miles to Central Asia and the Urals from Kharkov, Kiev and other occupied cities. In most cases libraries had to be left behind. The Kiev Medical Institute, cited as one example, was moved to Chelyabinsk in the Urals, 1300 miles away. The Kharkov Medical Institute, whose faculty and student body were evacuated as the Reichswehr battered at the city's gates, is now at Chkalov, on the Ural River.

Many of the books sent from America to these and other medical schools were contributed by doctors and medical associations from all parts of the United States. They range in subject from child development to neuroses in war.

Inquiries or gifts of medical books should be sent to Russian War Relief, Inc., 11 East 35 Street, New York, 16, N. Y. A complete list of the books needed in the Soviet Union will be sent upon request. Donors may attach to their contributed books notes which will be forwarded to Russian medical libraries receiving the books.

XUM

THE GENESIS OF A DISABLING HEART ATTACK WITH DISCUSSION OF SYMPTOMS*

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In reading this intentionally informal paper, I make no claim to originality; all I shall say of scientific importance may be found in the books. My one distinguishing claim is that of an intimate and very personal familiarity with the case history and of all the symptoms reported. I trust that in a measure, by personalizing it, I may make the case report sufficiently vivid to be worth your attention.

Whatever may be your opinion about the causes of heart diseases in general, the fact remains that we, as a class, are peculiarly prone to cardiac disease, for, if you will check the deaths from cardiovascular disease occurring among physicians in any copy of the *Journal of the A. M. A.* and compare them with deaths from all other causes, you may appreciate my reason for calling your attention to some phases of heart disease with an illustrative case. If I seem indelicately personal in reporting this case, I beg you to believe it is because of the desire that you may become acutely aware of what might happen to you and how you may avoid the consequences of inattention to the warning signals which the patient, whose case history I shall discuss, recognized, but for many years completely ignored.

In accepting our Chairman's invitation to discuss some subject connected with diseases of the heart, I decided to report the case history of a patient of whom I have had an intimate knowledge extending over a number of years. I shall do so particularly for the purpose of directing your attention to some of the symptoms that have keenly interested me and have likewise commanded your attention time and again in your own practice.

I shall not tax you with a detailed review of the pathology of heart diseases, for the emphasis of modern cardiology, as McLeod says in his superb physiology, is laid on the etiology of the disease and the functional capacity of the patient rather than on the description of the structural defects.

In our study of diseased organs, I sometimes wonder if we may not fail to keep in proper perspective the anatomy and physiology so perfectly designed and adjusted by the Creator to perform their function in the animal economy. If you have not reviewed these sections in your study of the heart in recent years, time permitting, I can commend to your attention no more profitable and intriguing reading than is to be found in the recent text-books covering these subjects.

Physiologists discuss the heart's action from two points of view: The physical and the physiological. McLeod, considering it from the physical viewpoint, speaks of it as the pump of circulation which raises the blood pressure within the cavities, equipped with valves to direct the blood always in one direction. He also explains the causes of secondary phenomena, such as the sounds accompanying the heart's action, and certain secondary changes in pressure produced in the other thoracic viscera by each heart beat. From the physiological viewpoint, he calls our attention to the conditions responsible for the constant rhythmic activity of the heart and its control by the nervous system.

The older members of the society will recall with interest that Dr. Paul Dudley White, as the guest of this society many years ago, conducted a seminar on the heart for a week or more and held us spellbound as he discussed the more recent knowledge of the anatomy and physiology of the heart, defined the function of the pacemaker, explained the arrhythmias, demonstrated the use of the polygraph and revealed the incredible wonders of the electrocardiograph.

These and other means of scientific approach to the study of the diseases of the heart have vastly increased our knowledge of the normal and diseased heart, but supplement rather than take the place of careful history taking and physical examinations of the patient.

Let us never forget that in heart disease the subjective symptoms nearly always precede signs that are later demonstrable to the examining physician. Your reader regards this statement as the very heart of this paper.

*Read before the Augusta County Medical Association, at Staunton, February 3, 1943. The paper was illustrated by lantern slides.

The case history I wish to call to your attention is that of a physician who in his 63rd year was compelled to retire because of a coronary thrombosis, the culmination of rheumatic and hypertensive heart disease.

The attack of coronary thrombosis and subsequent history was such as you are all familiar with in your own practice. My object in reporting it in detail is to call your attention particularly to its pathogenesis covering a period of many years, and especially to guard you younger men against the intemperate working habits of the patient, and his utter disregard of the warning symptoms which he himself recognized but kidded himself in thinking that it couldn't happen to him.

The laboratory findings are not available and are recalled too indistinctly to report, except the fact that at the several clinics he attended there was no history or laboratory evidence of syphilis.

The patient's family history is unimportant except for the fact that a brother died of coronary thrombosis at sixty-three. The history that is pertinent is as follows:

The patient had recurrent attacks of tonsillitis since his earliest recollection until his tonsillectomy some fifteen years ago. When about ten years of age he had a disabling attack of rheumatic fever. He has had attacks of arthritis of more or less severity at intervals ever since and is rarely ever entirely free of such symptoms. In his twenty-second year he had eight weeks of typhoid fever, at twenty-six broncho-pneumonia complicating influenza, and diphtheria at the age of twenty-eight.

Rarely a year passed without a severe attack of tonsillitis which was frequently exudative and usually accompanied or followed with pains of more or less severity in the larger joints until his tonsillectomy as above noted. He does not recall giving up his work on account of these attacks except on one or two occasions, even though he often had considerable elevation of temperature. In 1916 or 1917 he had an attack of arthritis involving first one and then the other ankle with the usual symptoms of inflammation which rendered walking difficult and embarrassing but he did not stop work on account of it.

In February, 1919, while on night duty in camp, the patient was exposed to a severe storm, contracted a "cold" and was hospitalized for influenza with a sinus complication. For the latter, he was sent to Walter Reed for treatment from March 9th to April 1st.

Returning to his army post, some weeks later, he was awakened during the night with agonizing retrosternal pain which he thought was due to imprudent eating at the recreational center at a late hour that night. This was the first attack of angina pectoris the date of which he can definitely fix, but the attacks have continued at more or less frequent intervals and with varying degrees of severity, although his state of health, generally speaking, was as usual until 1923. At this time, he noticed stunts like taking hospital stairs two steps at a time, as had been his usual habit, could no longer be done without developing shortness of breath. In the intervening years, the breathlessness became disturbing and he noted slight edema of the ankles.

In the influenza epidemic of January, 1929, during a period of unusual stress and strain, dyspnea became more and more pronounced on exertion and was accompanied with definite retrosternal pain and a slight nocturnal cough with expectoration of frothy mucus. He had no elevation of temperature. These symptoms were so embarrassing that intervals of rest were necessary on climbing stairs or taking a moderate grade. He developed frequent attacks of nocturnal pain and dypnoea of such severity that sleep was nearly impossible. The patient would awaken time and again finding himself in the sitting posture in a state of violent hypopnea. These attacks of pain, dypnea and orthopnea made sleep impossible and he was finally driven to remain in bed for several days with definite relief. Then daily for the next week or ten days, he would venture out to make a call only to be forced home because of the retrosternal oppression and pain excited by breathing the wintry air. Following a night with disturbing dypnea, orthopnea, retrosternal pain, cough and expectoration of bloody mucus, the patient consulted a physician at the University of Virginia Hospital who made a diagnosis of broncho-pneumonia and ordered him to bed for several weeks. Not satisfied with the diagnosis, in February, this self-prescribing doctor, and I say this to condemn the practice, although loath to believe he had angina, consulted a cardiologist at St. Luke's Hospital, in Richmond, Va., who told him he defi-

XUM

nitely had angina pectoris and advised him to go at once to Florida. This advice was promptly respected.

Within 36 hours after arriving in Miami, the patient developed the most severe and disabling attack of arthritis involving the right knee he had experienced since childhood, but the anginal attacks stopped promptly and did not develop again until after his return to work in April or May.

Being now in his sixth decade, and appreciating his physical handicaps, the patient gave up most obstetrical and night work.

The anginal attacks became more frequent and the dyspnea more disturbing during the year preceding the attack of thrombosis, but the symptoms of congestive heart failure were never again so marked as in 1929.

In October, 1933, the patient first consulted a distinguished cardiologist at the Massachusetts General Hospital who told him he was suffering from hypertensive heart disease, coronary disease, left bundle branch block and left ventricular and congestive heart failure.

He advised him to return home at once, give up his work and put his house in order.

In discussing the symptoms with the patient, the consultant stated that the attacks of orthopnea occurred as a result of Cheyne-Stokes breathing in which the periods of apnea were unusually prolonged, forcing the patient to sit upright for relief. The patient recalled that he usually awoke during the state of hypopnea but that on several occasions he would awake in the upright position during the prolonged period of apnea in a state of great distress and agitation. The doctor's explanation of the episode was as follows: In the recumbent position, the failing hypertensive or coronary heart resulted in an insufficiency of oxygen in the blood with overstimulation of the respiratory center, inducing a condition of hypopnea. This in turn produced a saturation of the blood with oxygen and washed out so much carbon dioxide, the stimulator of respiration, the center was depressed and apnea supervened. This period in the cycle may last for a full minute or more.

Heedless of his physician's advice, the patient returned to his work. Within a few weeks the symptoms became so intolerable he consulted a cardiologist at the University of Virginia who confirmed the diagnosis in detail and advised him to exercise the utmost care in driving home and to go at once to bed. Still heedless of advice, he answered a number of calls in the P. M., turned in at early bed time and within an hour or two had an attack of coronary thrombosis with the usual symptoms, including agonizing pain, rapid pulse, shock, marked nausea and vomiting and pronounced and persistent vertigo.

Following a period of hospitalization in Washington for around five months, and attended by distinguished Washington and Baltimore consultants, the patient was pronounced totally and permanently disabled for work and was returned home. In December, just thirteen months from the first attack of coronary thrombosis, he had a similar attack with a long period of invalidism. During the next four or five years there was a gradual but progressive return to a fair degree of activity. In September, 1939, the patient developed a moderately sore throat on Monday, but continued his usual activities. On Friday, exhausted and finding his temperature 104, he went to bed and called his physician. During the course of this attack he was awakened during the night with a severe pain in the region of the right scapula which was, I believe, thought to be a pulmonary infarction and confirmed some weeks later at Walter Reed Hospital. During the patient's confinement at the hospital, a thrombophlebitis of the right leg occurred, prolonging his stay for months. Since then, February, 1940, he has made more rapid and definite improvement than has taken place at any time since the two coronary accidents. He thinks he might yet confirm Levine's statement that one may possibly survive multiple attacks of coronary thrombosis.

In his chapter on hypertensive heart disesase, Levine writes that the exact role played by the elevation of blood pressure is by no means clear, for the same degree of hypertension that is well tolerated by one patient for years may result in early cardiac deficiency in another.

And the cause or causes are equally obscure, whether due to permanent structural changes within the body, especially the arterioles, or to an altered nervous or functional state may be difficult to determine.

Raising an interesting question in respect to the etiology of hypertension is that group of cases having hypertension and angina in which, following an attack of coronary thrombosis, the blood pressure falls and the anginal attacks are relieved more or less completely. In the case under consideration this was the fortunate experience of my patient who, after becoming ambulatory, has had no return of high blood pressure and his anginal attacks are rare indeed compared with the frequency of his former attacks.

Levine states that in such cases permanent reduction of blood pressure is obviously due to an injury of the heart and cannot be explained on the basis of structural changes in the peripheral vascular tree, and that it is reasonable to suppose the previous hypertension was caused reflexly from an irritable focus in the heart, and, after the coronary thrombosis occurred, the local cause was removed.

Let us consider some of the more important symptoms in the case.

The first subjective symptoms were those of breathlessness on exertion and substernal pain, and subjective symptoms, let me insist, are the earliest evidences of heart disease. Regardless of our own skill and cleverness in making physical examinations, let us bear in mind Levine's statement that subjective complaints generally precede physical signs as evidence of heart failure; that the earliest evidence is shortness of breath on effort which formerly produced no distress. This, he says, is due to failure of the left ventricle and may be accompanied with slight cough, Cheyne-Stokes breathing and orthopnea, such as the case presented when he called on Dr. White. White found left ventricular failure, which is less common than failure of both ventricles but right v. failure shortly developed and was recognized by White on the occasion of a later consultation.

In writing of dypnea as an important cause of insomnia in coronary disease, White stresses position as an important factor, giving four reasons therefor:

First: The blood flow in recumbency is greater than in the upright position, in which gravity relieves the heart of an amount estimated at from one-third to one-half as much as passes through it in recumbency.

Second: In the upright position gravity drains off the engorged lungs.

Third: In the upright position with diaphragm and enlarged liver depressed, and ascitic fluid, if any, dependent, there is more room in the thorax for free heart and lung action.

Fourth: And importantly, in the recumbent position the respiratory center itself is directly acted upon by the high venous pressure, whereas gravity in the upright position at once helps to correct so far as the respiratory center is concerned. All of us are familiar with the appearance of the elderly patient with congestive heart failure sitting day and night in an arm-chair because of a decubitus dyspnea. White offers much the same explanation for nocturnal apnea the prognosis of which he says is especially grave—a fact of no especial comfort to the patient whose case is under consideration, as most of his severe attacks awaken him from sleep.

Levine says that bundle branch block occurs most frequently in hypertensive heart disease, in coronary disease, and in aortic and mitral stenosis, and always denotes disease of the myocardium, and that the average duration of life in cases of left B. B. B. is not more than a year or two, although exceptional cases may carry on for years. Your attention is directed to the fact that it has been nine years since White first recognized left B. B. B. in the case we have been reporting, and that it has been observed in all subsequent cardiograms.

As you well know, bundle branch block is due to blocking of impulses which originate in the sino-auricular node as they traverse the bundle of His and may involve either the right or left branch before they break up into the fibers of Perkinze. White tells us that it causes no symptoms, and the diagnosis of blocking is made only with the aid of cardiograph. Levine says B. B. B. may be suspected under certain conditions with gallop rhythm.

In speaking of the etiology of coronary thrombosis, Levine says that all the influences that are conducive to or are associated with arterial disease form the background upon which coronary thrombosis develops. The great majority of such patients have had a previous history of angina pectoris. The exact etiology is still a moot question not profitable of discussion here. The attacks, as in the case referred to, most often occur at rest in bed and are accompanied with degrees of pain of scarcely notice-

XUM

able character to the most agonizing suffering a mortal can endure. You are familiar with the symptoms and diagnosis. While the electrocardiograph is invaluable in making a study of these cases, White states that cases of complete occlusion of one main artery may occur without showing any evidence whatever of its existence in the cardiogram.

In calling your attention to the symptom complex known as congestive heart failure as a part of the picture of the case under consideration, I shall follow Levine rather closely as he has written the most illuminating chapter on the subject with which I am familiar. The onset of congestive heart failure cannot be predicated on the basis of the level or duration of the blood pressure with which it is commonly associated, for in many instances the determining factor is the integrity of the coronary arteries. There are yet other instances in which these vessels are apparently normal in which cardiac insufficiency develops. Levine calls this unknown etiological factor "X" and thinks it accounts for much that determines the whole question of congestive heart failure. The heart, he suggests, like skeletal muscles and other organs, contains many times more capillaries than are in use under ordinary circumstances. They are always subject to call and constitute the cardiac reserve. Levine ingeniously asks if when the heart failure develops and yet shows no obstruction in the main coronaries, may not the cause lie in some structural or functional defect, this unknown factor "X" that prevents the opening of these reserve channels?

Failure of one or both ventricles may occur with their distinguishing symptoms. Again, let me urge you to listen attentively to your patients' complaints, for they nearly always precede physical signs as evidence of heart failure. There are few if any signs that would suggest congestive failure in the absence of symptoms. Levine suggests Cheyne-Stokes breathing, diastolic gallop rhythm and possibly pulsus alternans which might possibly be detected and suggest impending subjective symptoms.

"The earliest evidence of heart failure," asserts Levine with conviction, "is abnormal breathlessness. The patient notices shortness of breath on efforts that formerly produced no distress. This is due to failure of the left ventricle." The dyspnea may come suddenly while at rest and may become more distressing until orthopnea develops. Cheyne-Stokes is common, rales are heard in the bases of the lungs, and a slight unproductive cough develops, usually nocturnal, or it may be on effort as a result of pulmonary congestion.

The first evidence of right ventricular failure is dependent edema, seen in swelling of the ankles at bed time which in the early stages disappears after the night's rest. As the case progresses, the edema extends upward and may become generalized. As a part of the venous congestion due to the failing right ventricle venous pressure increases, the jugulars are distended and the liver enlarges with the development of epigastric distress. In the case presented, the pain has always been worse at the lower angle of the right scapula, nearly always follows overexertion, and is of a dull aching character. It has been thought to be due to hepatic and pulmonary congestion. Levine says that ascites may be present as part of the picture, or as a result of portal obstruction. He further states that the combination of right and left ventricular failure is seen oftener than either one in the pure form, a statement that may be open to question.

The mechanism of congestive heart failure is not clear. One school of thought believes it is due to insufficient output of the heart to the tissues (forward failure), and the other that it is due to congestion of parts of the body, or back pressure (backward failure). Of one thing, says Levine, we are certain—while the heart may adjust itself to a slight imbalance in output from the two sides for short periods of time, the two ventricles must expel equal amounts of blood, else disaster will occur and you will see the complex of symptoms which we call congestive heart failure.

THE WOLFF-PARKINSON-WHITE SYNDROME

JOHN P. LYNCH, M.D.,
and
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The unusual or rare finding in medicine is one incentive which keeps clinicians constantly on the alert, not only because of the advance in medicine that can be made by reporting a rare observation, but from the genuine pleasure the clinician himself derives in the recognition or discovering of something new and rare. When the observation has a practical clinical and human value it becomes worth reporting. Such is the recognition and subsequent clinical evaluation of the so-called syndrome of functional bundle branch block with short PR interval.

Mr. R. S., a 32-year-old photographic finisher, was first seen September 19, 1942, because of a complaint of palpitation of the heart. About an hour previously he had had what he termed a heart attack characterized by rapid beating and a fluttering sensation of the chest. These disagreeable sensations lasted only about 15 minutes. For the past 2 or three years he reported similar episodes at 2 or 3 months' intervals. The actual time of the rapid heart action was 10 to 15 seconds, but this was followed by a sinking feeling, slight dyspnea, and weakness, but attended by no pain. The attacks were apt to occur when he was overtired or nervous. There is no history of rheumatic fever. He had mild scarlet fever at the age of ten and there were no complications. He admits no necessity for restricting his physical activity.

His past history reveals measles, mumps, varicella and pertussis in childhood, recurrent bronchitis, and severe fungus dermatitis in 1933. His family history is non-contributory. He smokes slightly more than a pack of cigarettes daily and takes an occasional alcoholic drink. He works eight to ten hours daily in an ill ventilated, photographic, dark room, and his hands stay in a chronic state of inflammation due to a sensitivity to developing fluids.

The physical examination revealed a small, well developed male. The temperature was 98.6, and pulse 80. The heart was normal in size. There were no abnormal pulsations, murmurs or arrhythmias. The blood pressure was 110/80. The remainder of the physical examination, except for a scaling roughness of the hands, was essentially negative. The laboratory examination revealed hemoglobin 98 per cent, white blood count 7,350, with 67 per cent polynuclear neutrophiles, 32 per cent lymphocytes, and 1 per cent mononuclears. Urine was clear, acid, specific gravity 1,012; and sugar, acetone and albumin negative. The blood Wassermann was negative.

The electrocardiogram (Fig. 2) is of particular interest. The auricular and ventricular rates are 75. The PR interval is only .08 second, which is but half the normal. The QRS complex is .12 second. The rhythm is regular. Lead I shows wide, slurred R wave; Lead II, a wide, high R wave and an inverted or diphasic T; Lead III, an inverted T; and Lead IVF, a small R and a high peaked T.

The distinguishing characteristic of this tracing is the short PR interval with the wide slurred QRS complexes. This finding, while interesting cardiographically, does not indicate myocardial degeneration. A hypodermic injection of 1/75 grain of atropine had no effect on the pattern at 15, 30 and 60 minutes after.

We have shown this tracing with a true bundle branch block (Fig. 1) to illustrate the similarities and differences.

The true bundle branch block from another patient (Fig. 1) shows the auricular and ventricular rate of 65, the PR interval .16 seconds, the QRS .16 seconds, and the rhythm regular. Lead I shows wide, slurred QRS, and diphasic T; Lead II, wide, slurred QRS; Lead III, wide slurred, deep S; and Lead IVF, small R, and wide, slurred QRS. This is the picture of left bundle branch block, discordant type, which means myocardial degeneration, particularly of the ventricular conducting mechanism.

The syndrome of bundle branch block with a short PR interval was first reported by Wilson in 1915. Two other cases were reported in 1921 and 1929 respectively, but not until 1930 was there any

XUM

large group reported when Wolff, Parkinson and White collected and reported eleven cases, thus establishing the syndrome as a clinical entity. In

tern is still rather rare, more and more are being recognized.

The syndrome usually occurs in healthy, young

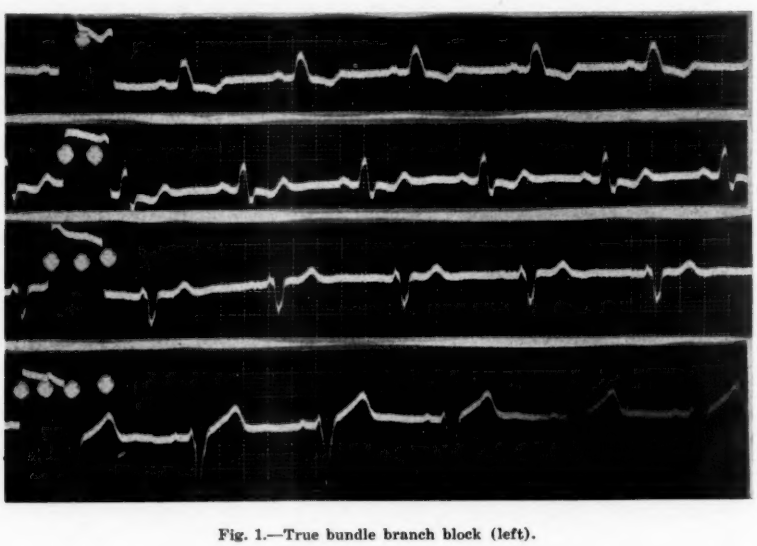

Fig. 1.—True bundle branch block (left).

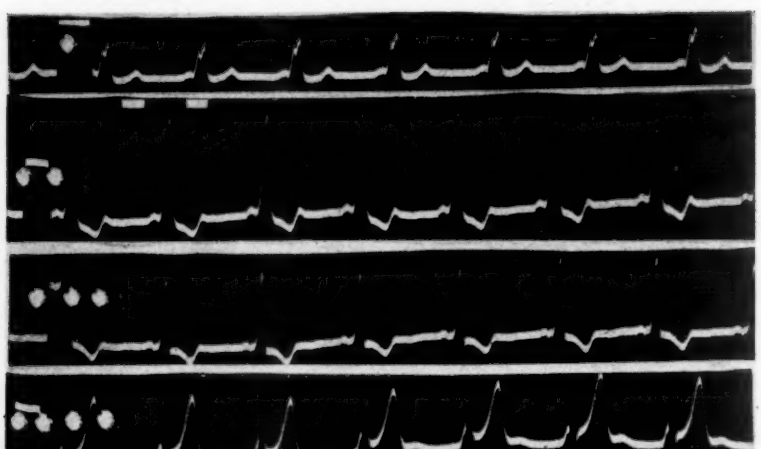

Fig. 2.—Wolff-Parkinson-White syndrome.

1936 Argentine workers reviewed twenty-seven from the literature and added seven of their own. In 1937 Bishop collected forty-four cases from the literature and added one of his own. Although the pat-

individuals, in men more often than in women, and most frequently in the second, third and fourth decades. The history of frequent attacks of palpitation after exercise or at rest is characteristic but

not inevitable. When organic heart disease is discovered in those having this condition, it is regarded as purely coincidental. Remission of the electrocardiogram to normal may be induced experimentally or may occur spontaneously. Atropine, quinidine or digitalis, respectively, have been used with varying degrees of success in accomplishing this.

The etiology is still uncertain. Two schools of thought seem to prevail in the literature. One postulates an accessory conducting bundle between the auricle and the ventricle (bundle of Kent), which is thought to shunt the impulse, thus creating a shorter PR interval, and at the same time, because of its aberrant course and entrance into the ventricle, to produce an abnormal QRS complex. The other theory holds that abnormal vagal tone slows the conduction through one of the conducting bundles, thus causing the impulse of the affected side to proceed around through muscle mass. However, since no one has demonstrated anatomically a bundle of Kent and since neutralization of the vagal effect by atropine does not always result in the abolishing of the bizarre electrocardiographic pattern, we must await further evidence before adopting either theory.

It is unanimously agreed among competent writers of wide cardiac experience that the disorder is purely functional. As Bishop has so succinctly stated, the patients are suffering from an electrocardiogram and not a disease. The tachycardia which is frequently associated with the syndrome, if troublesome, may be controlled by quinidine.

Therefore, the treatment is one of reassurance to the patient by encouraging him to live a normal life in spite of an occasional attack of tachycardia.

CONCLUSIONS

1. A case of bundle branch block with a short PR interval is reported.
2. A brief review of the theories of its causation is given.
3. The management of the patient is indicated.

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Report Effective Use of New Solution for Epidemic Eye Disease.

Effective use of a solution of sodium sulfathiazole containing desoxyephedrine in the treatment of epidemic keratoconjunctivitis, the new eye disease, is reported in *The Journal of the American Medical Association* for July 10 by H. S. Gradle, M.D., Chicago, and G. H. Harrison, M.D., Waukegan, Ill.

"Epidemic keratoconjunctivitis," the two men say, "has taken an enormous toll of man-hours during the past year, for the average loss of working time incurred in each case is from fourteen to eighteen days. Consequently any measure that can reduce such wastage is worth trying, even though it may not be uniformly successful. On that basis we are reporting the use of a new therapeutic measure that in our hands has proved worth while. It is realized that the number of cases is small, that the results are only those of clinical observation and that the accurate serolgic proof is missing."

The authors say that the new medication is harmless to the tissues of the eye, and reduces the time of the acute aspect of the disease to three to seven days. The solution is used as eye drops. In the 50 cases reported by them treatment was continued for several weeks after the acute phase had subsided.

XUM

SOME MENSTRUAL DISTURBANCES*

JEROME NATT, M.D.,
Roanoke, Virginia.

Among the most frequent complaints we find in women are those concerned with menstrual disorders. We are all familiar with the more common disorders of amenorrhea, menorrhagia, metrorrhagia, etc. It is not my purpose to discuss these conditions, but rather to present several clinical pictures which seem to me to be related to a glandular disturbance, and which, to a greater or less extent, have responded to glandular therapy.

Case 1.—This was a white female, married, aged 28, who was first seen in January, 1939, complaining of nervousness and "peculiar" sensations over her entire body, beginning a few days before her menses and lasting throughout her periods. In the past, she had had acute rheumatic fever and an appendectomy. She began to menstruate at the age of 14; periods were regular every 28 days, lasting 3 days and accompanied by severe dysmenorrhea for one day. Her present complaint, as stated above, began about one year before I saw her. At that time, she also noticed a lessening in the amount of her menstrual flow.

Physical examination was negative except for a B.P. of 108/66, and the ordinary blood and urine tests were within normal limits. B.M.R. was minus 17. A vaginal smear showed many leucocytes with very few epithelial cells with large, dark, oval nuclei, suggestive of deficient estrogenic hormone—(eosin-hematoxylin stain). On the basis of her history, it was felt that this was a case of premenstrual tension, and, accordingly, she was given proluton to increase luteinization. However, this seemed to aggravate her symptoms. As a result, a shift was made to estrogenic substance and this was given once a week between periods for 4 months with complete relief of her complaints. However, since that time, she has returned at varying intervals of 2-6 months time because of a flare-up of her original complaints. On each occasion, one injection of 5,000 units of estrogenic substance seems to control her symptoms.

Case 2.—A white female, married, aged 31, complained of nausea and vomiting on the second day of her menstrual period. This had been going on for several years but in the past few months had become much worse. Her menses began at the age of 13, in a 28 day cycle, lasting 5-6 days until six months before her first visit on February 4, 1942. Since then the periods had lessened in amount and in duration to about three days. Thirteen years before she had had a spontaneous abortion at about the third month of pregnancy. Physical examination and laboratory work were essentially negative except for B.M.R. minus 14; B. P. 116/72. Vaginal smear findings were similar to Case 1. Glandular therapy was begun with 2,000 units of estrogenic substance being given every four days for one month. She felt some better and the dose was increased for another two months. At that time she felt fine and instituted in the form of 2,000 units of estrogenic therapy. She is now in the fourth month of her second pregnancy and is doing well.

Case 3.—A white female, aged 16, single, first seen in January, 1941, complained of severe nausea and vomiting for the first 24 hours of each menstrual period. Her periods had begun one year previously, lasted 5-6 days, and ran a 21 day cycle. She had no pain or discomfort at the time other than the vomiting. Physical examination, blood and urine were normal. Sedatives and antispasmodics were tried for several months with no lessening in the complaints. Glandular therapy was instituted in the form of 2,000 units of estrogenic substance weekly between periods. This treatment was carried out for three months and since then there has been no return of the above complaints.

Case 4.—A white female, single, aged 19, first seen in June, 1940, complained of having convulsions at her menses for one year. These convulsions occurred during her sleep and she did not know how severe they were, although on several occasions, the convulsions were so severe as to cause a dislocation of the shoulder. The past history was negative. She began to menstruate at the age of 12, in a 28 day cycle, with the periods lasting 3-5 days, and pain being present the first day.

Physical examination revealed a small uterus but no other pathology was found.

*Read at the meeting of the Roanoke Academy of Medicine on February 1, 1943.

Estrogenic substance was begun one week after her period ended and was continued every fifth day until the next period. This procedure was followed for three months without any recurrence of convulsions. For about one year she remained symptom-free at which time she left town and shortly thereafter had another convulsion with her menstrual period. A similar course of treatment was given again and since then (almost two years) there has been no return of the convulsions.

In presenting these four cases, I do so with the full realization that I cannot adequately explain the apparent success of treatment except that the complaints apparently were due to a lack of estrogenic substance. In connection with this, I would like to make a few remarks which might have some bearing on the matter.

In speaking of estrogenic substance I refer to the three main variants of the female estrogenic hormone which are now recognized:—

(1) Estradiol, which is probably the hormone actually produced by the graafian follicle. Has been isolated from follicular fluid.

(2) Estrone (estrin, theelin, folliculin, progynon, etc.), which is probably a derivative of and formed from estradiol in the body. Has been isolated from the urine, particularly that of pregnancy.

(3) Estriol (theelol) has also been found in the urine and probably represents another excretrion product of estradiol.

Owing to the difficulty in differentiating these substances, we shall consider them as "estrogenic hormone".

We do know that estrin, in the female, is the hormone which governs the growth and development of the genital tract, the secondary sex characteristics and the mental and physical traits characteristic of her sex. Furthermore, we know that estrin circulates in the blood stream after its release from the graafian follicle, and is thus carried to the various parts of the body. It reaches its maximum concentration in the blood stream during the few days immediately preceding menstruation when progesterone is dominant.

What the effect of this substance is on the other structures of the body, we cannot say, but apparently there is a very close tie-up between the glandular system and all the other structures and organs of the body. When one gland functions abnormally it can well upset the entire physical and mental status of the individual. If this be true, then a deficiency in estrin could well account for the bizarre side-effects of menstruation here presented. Apparently that was the condition in these cases; and by supplying substitution or stimulating doses of estrogenic substance we aided the glands to return to a normally functioning state and thus eliminated the complaints of the patients.

906 Medical Arts Building.

Sulfathiazole Used for Pyuria.

Good results from the use of sulfathiazole in the treatment of pyuria (pus in the urine) in 3 newborn boys are reported by Alfred Florman, M.D., and Murray H. Bass, M.D., New York, in *The Journal of the American Medical Association* for July 3.

In all cases bacteria were present in the urine. In 2 of the 3 jaundice was present and in 1 infant there was infection of the blood stream. These patients were treated with sulfathiazole and recovered in about two weeks in place of the five or six weeks needed for recovery before the use of sulfathiazole. The authors also stress that the physiologic changes taking place in the early infancy period are likely to lead to urinary infections at this early age.

XUM

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a thirty-five year old colored primapara who had had no prenatal care. Profuse vaginal bleeding associated with abdominal pain began on September 2, at 3:00 A. M. A midwife saw the patient and immediately called a physician, who referred the patient to a hospital, where she was admitted at 9:30 A. M. At the time of admission the temperature was 99, pulse 80, and respiration 20, R.B.C. 3,020,000, Hb. 56 per cent, W.B.C. 11,700. There was no record of the blood pressure. Bleeding continued throughout the day. At 6:00 P. M. the pulse was 160 and the patient was taken to the operating room and a vaginal pack inserted. At 10:00 P. M. a blood transfusion was given. Several doses of morphine were given throughout the night, and there was moderate bleeding through the vaginal packing. At 12:00 M. on September 3 the vaginal pack was expelled and the patient seemed weaker. At 3:00 P. M. a Cesarean section was performed, thirty hours after admission to the hospital. The child was stillborn. A transfusion of 500 cc. of blood was given following the section. She was given venoclysis and various stimulants, but her course was rapidly down hill and she died twenty-two hours after the operation.

COMMENT

This case is considered as a preventable obstetrical death. There was no prenatal care. The treatment employed after admission to the hospital does not conform with either of the generally approved methods of treatment for premature separation of the normally implanted placenta. There was a delay of thirty hours after admission before the patient was delivered by Cesarean section. In the meantime the pulse had risen from 80 on admission to 160 at the time of the vaginal packing, eight hours after admission. If this were a recent death one might be inclined to suspect that the present shortage of physicians and hospital personnel, may have been a factor in the delay, but as a matter of fact, this patient died three months before Pearl Harbor.

The choice of the method of treatment for premature separation of the placenta presents a serious dilemma for the physician. One thing is certain however, that whatever method is selected, it should be carried out at the earliest possible moment, while the patient is in good condition. In either method, blood loss and shock should be combated with whole blood transfusions, before, during, and after delivery. If vaginal delivery is selected the membranes should be ruptured and a tight abdominal binder applied. If delivery by section is selected the same preparations for transfusions before, during, and after the operation should be carried out.

In the present case, a thirty-five year old primapara, with a pulse of 80 at the time of admission, it is quite possible that a Cesarean section then may have saved the patient. In any event some definitive type of treatment should have been instituted shortly after admission, and not thirty hours later, at which time the opportunity for a good result had passed no matter what type of treatment was employed.

In view of the absence of prenatal care and the delay in instituting treatment it is felt that this should be considered as a preventable death.

MENTAL HYGIENE NOTES

Morals are not rules which have been selected in a haphazard fashion by unfeeling adults to regulate the lives of happier individuals whose happiness these sterile elders envy. Rather they are the results of generations of seeking by mankind for the most successful methods by which people can live together in groups. The moral way is the happiest way in the long run, and has been proved by ages of trial and error. The happiest and the most successful are synonymous terms when so used, because it is the long time happiness that is concerned and success of group living or civilization that is meant.

Morals may become outmoded so need change, but this change cannot be sudden, cataclysmic in response to a new situation, as right changes are only brought through years of trial. Therefore, any abrupt rupture of moral law by large groups in a community cannot escape being wrong, nor can there be any doubt that it, this rupture, is dangerous to right living, so menaces the civilization of the whole. Neither can there be any doubt that all intelligent people are duty bound to counter-attack such an onslaught with all their might.

Now and for the next few years our civilization is threatened by the increase of delinquency among early adolescents. Especially is this true for sexual delinquency. There can be no doubt that there is a change in the accustomed types of behavior of large masses of this age group. Therefore, it is necessary to meet this new evil by an intelligent counter-attack.

Already this is being done in the home to a slight extent, but in the main in the school. Here sex is consciously taught by skilled workers from the primary grade through the High School. This is a positive approach which conquers the unmoral attitudes by showing the joy, the beauty and truth which make the moral code live. A program of sex education is set up with planned foresight to guide the child from the more or less sexless childhood through the transitional period of beginning sexual awareness to late adolescence, when the maturing child must be ready for sexual life.

This program should be a community program understood by parents as well as teachers, since all must lend a guiding hand, but directed in detail by skilled teachers who understand the sexual development of the child. The program must adapt itself skillfully to the growth of the "love impulse". It must adopt a proper terminology which removes the mysticism, as well as the condemnation, which makes illegitimate sex acts so attractive. Sex knowledge must be correlated with everyday experiences until acceptable modes of sex expression are submitted for the unacceptable. Through knowledge obtained by frank discussion the causative factors of sex delinquency must be removed.

Public schools of the country have tried such a program with success. It will work if carefully fostered and carried out with courage. There is a large bibliography on the subject which could be reviewed by any community that is interested. The approach is new, but the idea is old. It is a positive response to a menace. It offers practically the only solution. It is a step forward that may in the future turn this threat to a greater good.

DAVID C. WILSON.

To Be Wise—Loaf.

In his book, "The Importance of Living," Lin Yutang, the Chinese Philosopher, points out that those who are too busy can't be wise and that the wisest man is he who loafs most gracefully.

Christopher Morley, the famous writer, once said that he lies on the davenport reading detective stories when some of his best ideas flow into his mind.

Elbert Hubbard declared that he got some of his best thoughts while riding horseback or digging in the garden.

There's too much piffle about pep. Americans think they are cheating if they are not rushing. We would solve more of our problems, develop better ideas, if we would do more loafing. Let's loaf more and be wiser! (*Selected.*)

XUM

Public Health

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The tabular report of the Bureau of Communicable Diseases of the State Board of Health for June, 1943, compared with the same month of 1942, and for the first six months of 1943, compared with the same period of 1942, follows:

	June 1943	June 1942	Jan.-June 1943	Jan.-June 1942
Typhoid and Paratyphoid	19	14	70	75
Diarrhea and Dysentery	326	409	928	913
Measles	1,021	340	8,873	4,624
Scarlet Fever	64	50	1,033	709
Diphtheria	11	14	163	214
Poliomyelitis	3	2	15	7
Meningitis	50	13	640	103
Undulant Fever	4	4	14	14
Rocky Mountain Spotted Fever	10	11	10	14
Tularemia	2	1	25	22

The month of June terminates the period of twelve months in which occurs the annual cycle of certain communicable diseases which are regularly most prevalent in the winter season. The following table summarizes the occurrence of cases of several such diseases in the year July 1, 1942 to June 30, 1943, in comparison with the corresponding period ending June 30, 1942.

	July-June 1942-1943	July-June 1941-1942
Diphtheria	648	755
Meningococcic Meningitis	722	138
Scarlet Fever	1,961	1,542
Measles	9,179	7,670
Tularemia	44	44

The most noteworthy item in the second table is the great increase of meningococcic meningitis which reflects a nation wide epidemic. While no great section of the United States has been without meningitis during this period, Virginia is one of the Atlantic seaboard States in which it has been especially prevalent. In most of the counties of the State only a case or two has occurred, and the disease has been most prevalent in a few highly congested areas. Complete data on mortality and the results of particular therapeutic measures are still unavailable, but incomplete data indicates that mortality has been at a relatively low rate chiefly because of the effectiveness of sulfonamide therapy.

The increase of scarlet fever and measles was due to minor local epidemics. The decline in diphtheria is a continuation of the downward trend of recent years. General prophylactic use of diphtheria toxin is probably responsible for the practical disappearance of diphtheria from numerous localities. This disease is now very unevenly distributed in Virginia with greatest prevalence in the far Southwestern section and in certain of the Southern Piedmont counties.

No change occurred in the number of reported cases of tularemia. Though only forty-four cases were reported, this disease is of great medical, epidemiologic and economic interest. As a relatively new clinical entity, tularemia presents a diagnostic challenge which should be kept in mind.

During the last twelve months there has been a comparatively low statewide incidence of the major communicable diseases with the exception of meningitis. At present there is no undue prevalence of typhoid fever or other major diseases of the summer season. We are already well into the period in which poliomyelitis is to be expected, without an undue number of cases. Though there has been a seasonal decline in meningococcus meningitis, it is still far above normal and this condition should be expected to continue in the immediate future. The beginning of a new annual cycle of diphtheria will be due in the late summer and early autumn, and this is the most appropriate time to administer antidiphtheritic immunizations for protection against it. It is needed not only for unimmunized infants and children, but also for older children whose immunity may have decreased since their toxoid treatment several years ago.

Miscellaneous

Recent Amendments to Food Rationing Meet New Needs.

Recent amendments to food rationing orders, involving osteopaths, condensed milk, fats, oils and hospitals, are summarized in *The Journal of the American Medical Association* for July 17 as follows:

The Office of Price Administration announced on July 2 that any medical practitioner authorized by the state in which he practices to prescribe all internal drugs is also authorized to certify that a person requires supplementary food rations for health reasons. Authority to make such certification was previously confined to doctors of medicine. OPA has now broadened the authority so that osteopaths in states which license osteopaths to prescribe all internal drugs may also prescribe supplementary food rations. Food rationing regulations provide that a person whose health requires more rationed food than his ration points permit him to buy may apply to his local board for necessary additional points. In some illnesses foods are prescribed in addition to drugs or medicines, or as a substitute for them. In some counties the work of ration boards in processing such applications has been much simplified through the voluntary help of the doctors themselves. By establishing panels to review all medical certifications and to advise the boards, responsibility for issuing extra rations for health reasons has been kept on a professional level.

The Office of Price Administration under the date of June 1 placed evaporated and condensed milk on the list of rationed products. These types of milk are added to the group of rationed foods containing meats and fats, for which red ration stamps are needed, without any increase in the total number of points allowed for this group. One point is required for one 14½ ounce can or for two 6 ounce cans or for two 8 ounce cans. This means that the child may use 7 of his 16 points per week for his milk requirements in terms of evaporated milk, which allows slightly less than the equivalent of a quart of whole milk per day, and have 9 points remaining for his meat and fat requirements. An invalid or any other person whose health requires that he have more canned milk than he can obtain with the stamps in his War Ration Book II may apply at his local War Price and Rationing Board for additional points. The consumer must submit a written statement of a licensed physician showing why he must have more canned milk, the amount needed during the succeeding two months and why unrationed foods cannot be used instead. A supplemental allotment to acquire canned evaporated and condensed milk needed by a hospital to meet the dietary needs of its patients may be obtained on application to its local War Price and Rationing Board. It is understood that, if the present method of rationing does not make evaporated milk available in all areas for infants and children, some more effective method will be worked out.

The Office of Price Administration has issued an amendment to ration order number 16 (R. O. 16, amendment 25) which permits the use of rationed fats and oils for external therapeutic purposes. This includes the use of vegetable oils, such as cottonseed oil, for bathing newborn infants, for external application in skin diseases, for urethral injection or lubrication of urethral instruments, and for x-ray visualization. Such use of rationed fats and oils is defined as "industrial consumption" and persons using these products for such purposes are classified as "industrial consumers." An industrial consumer engaged in the care and treatment of the sick and needing rationed fats and oils for this purpose may apply to his district Office of Price Administration for a certificate with which to acquire them. The procedure to be followed, briefly, is as follows: The application should be made on form R-1605 to the district office. If the applicant is a hospital the district office will pass on the application by using the same method of computing allowances as the local boards use in computing allotments for industrial users; otherwise the application will be forwarded to the Washington office for action. If the applicant requires more than he would receive by the method of computation described, he should also submit form R-315 stating the reasons for such request. An "industrial consumer" to whom a certificate is issued for "industrial consumption" of rationed fats and oils may use it only to acquire the foods for which application was made and may use those foods only for the purpose for which the application was granted.

XUM

For several months the Office of Price Administration and medical authorities have been studying the hospital problem with a view to developing a uniform procedure covering the granting of supplemental allotments for hospitals. Solution of the problem is believed near. In the meantime a provision in the regulations (section 11.6 of general ration order 5) should enable hospitals to obtain the necessary supplemental allotments so that patients need not suffer from dietary deficiency. This provision gives local boards authority to grant such allotments to meet the dietary requirements of patients living in and receiving care in hospitals whether or not such patients are on special diets. In determining the amount of the supplemental allotment of processed foods and the commodities covered by ration order 16, the local board will take into consideration the availability of fresh fruits and vegetables, unrationed substitutions such as poultry and fresh fish, and the physical facilities of hospitals to process and store such foods.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

Alexandria.

The Auxiliary to the Alexandria Medical Society met on June 7th at the Laura Lee Candy House with Mrs. Nathan Schuman, president, presiding. A review of the projects for the past year was given. These include a contribution toward the purchase of a microtome for the Alexandria Hospital Laboratory; contributions to the *Gazette* Pipe Fund, the Red Cross Drive, and the U. S. O.; a bond donated to the Jane Todd Memorial Fund; redecoration of the doctors' lounge at the Hospital; and a three-year scholarship for a student nurse entering the nursing school on September 1st. The Auxiliary also took an active part in the cancer drive, and Red Cross sewing replaced all planned programs at the monthly meetings.

The Norfolk Auxiliary

Met on May 5th in the Library of the Medical Arts Building. Delegates and alternates to the State meeting were named as follows: Delegates—Mrs. R. M. Reynolds, Mrs. Southgate Leigh, Jr., Mrs. C. M. McCoy, Mrs. Charles H. Lupton, and Mrs. S. Byron Pope; alternates—Mrs. K. K. Wallace, Mrs. M. F. Brock, Mrs. Albert G. Horton, Mrs. J. W. Anderson, and Mrs. G. W. Simpson.

Mrs. Albert Horton was named chairman of the U. S. O. dances which the Auxiliary sponsors on the first Tuesday of each month. Members of her committee are Mrs. J. W. Anderson and Mrs. Walter P. Adams.

Members were reported to have filled thirty ditty bags for service men.

The Auxiliary adjourned until the fall when the President, Mrs. W. E. Butler, will entertain at a tea.

MRS. BROCK D. JONES, *Chairman*
Press and Publicity.

Book Announcements

Mental Illness: A Guide for the Family. By EDITH M. STERN. With the Collaboration of SAMUEL W. HAMILTON, M.D. New York. The Commonwealth Fund. 1942. xvii-134 pages. Cloth. Price $1.00

This little volume is, as its title suggests, a handbook of guidance for the baffled layman who must for the first time face the problem of mental illness. The author has apparently made a thorough study of all the aspects of mental illness that the layman encounters and, in addition, has had the collaboration of Dr. Samuel W. Hamilton, Mental Hospital Advisor, U. S. Public Health Service. The book discusses in an authoritative manner the questions of hospitalization, commitment, treatment and prognosis of mental illness. The choice between private and state supported hospitals is wisely discussed. An attempt is made to inculcate in the family of the

mentally ill person the proper attitudes toward this type of disease and to explain how best they may cooperate with the physician and hospital authorities. The final chapter entitled "There's More You Can Do" is a well-phrased appeal for the support of the mental hygiene movement.

The author's approach is sound and adequate and her facts accurate and clearly presented. The appendix contains information about methods of commitment and supervision of mental hospitals in the various states, a valuable glossary of technical terms used, and a list of the various state and national mental hygiene societies.

The professional neuropsychiatrist will have no need for such a handbook. The average physician, however, whose contact with mental illness is casual and infrequent, will find here a very important store of information to aid him in guiding the perplexed relatives of the mentally ill patient when the occasion does arise. To the confused and frightened family of the psychotic patient this guide-book should prove invaluable.

L. D. POLICOFF, M.D.

Man in Structure and Function. By FRITZ KAHN, M.D., Translated from the German and edited by George Rosen, M.D. Alfred A. Knopf, New York, 1943. Vol. 1—341 pp., 207 illustrations; Vol. 2—398 pp., 254 illustrations. Price $10.00.

These two volumes are the best discussion of physiology for the layman that I have ever seen. The various systems are taken up, such as skeleton, muscles, circulation and digestion, and illustrated by clever and original drawings and photographs. In fact, the many drawings of tissues in perspective will be of interest to physicians who from a too intimate knowledge of the two dimensional histologic preparation, often find it difficult to visualize the true microscopic status of tissues. The book reads easily, and is written in an interesting and simple style. Were it not for the price, and the many minor errors, it would serve exceedingly well for elementary courses in physiology as in college, and for pharmacy students. It is not merely an explanation of normal function, but discusses briefly what every layman is correctly interested in, as cerebral hemorrhage, sunstroke, and heat exhaustion.

Unfortunately, the books are replete with small errors which are annoying: the constant spellings *metre* and *dextrine* are a stumbling block for those used to proof reading; page VI: "A crystal no larger than a gram of dust; page 7: "Milk . . . reveals to the microscopist the millions of silvery fat globules and protein particles"; page 9: ". . . each cell is 0.0008 in. long, so that over 8000 cells could be put side by side along one edge of a cubic inch . . .".

Some of the author's physiology may be characterized by that term, so complimentary to furniture, but of dubious value in science: *antique*. For example, p. 195, there is restated the idea that during digestion blood is diverted to the alimentary tract, producing cerebral ischemia; p. 301, he still ascribes to the epiglottis the function of covering the trachea during swallowing; on pages 386 and 398 is the statement that it is ergosterol in milk and human skin that is irradiated to vitamin D. The commercial canners will not appreciate his statement (p. 392) that one will develop scurvy when living on canned foods.

Others of the author's ideas are either too ancient to be recognizable, or else are extremely novel, as on page 213, where he states that the reticulo-endothelial cells prepare a hormone from certain constituents of red cells, which stimulates the red bone marrow to greater erythrocyte production. On page 217, he states that after a blood transfusion, the foreign red cells disintegrate after four to twenty hours; on page 310, that secretin stimulates the gastric glands; p. 402 "alcohol . . . stimulates the brain". The author's endocrinology is especially on the addled side: p. 728 "excess quantities of the egg maturation hormone (?) leave the body with the urine; p. 730, for the hormonal test of pregnancy, "urine is injected into a virgin mouse"; p. 730, "If the corpus luteum is destroyed the child dies in the uterus".

Why, O why, don't publishers have such manuscripts read by someone of mild intelligence and a general knowledge of physiology like ye reviewer (Adv.) before publishing? And why didn't the publisher mark the back of the volumes 1 and 2, in order to distinguish between them? In any case, the book is worth looking at for the pictures alone, and can be recommended to patients who want to know something of that mechanism with which they have to put up as long as they live.

R. J. M.

XUM

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

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War Babies

THAT there has been a great increase in the number of babies needs no statistical proof. Pregnant ladies are to be seen on every hand. In fact some ladies who are not pregnant and who have no hope of becoming pregnant complain of being conspicuous when they go on the street. The situation is by no means confined to this country. Letters from North Africa express the belief that there is scarcely a woman there between 15 and 45 years who is not pregnant. Is it the result of a cosmic urge to replace inevitable losses or are there more tangible reasons? In the present war a new baby is a financial asset if the husband is in the Armed Forces. However, this was not the case in previous wars when there was also a marked increase in birth rate. A short range view either by the individual or the community should be against having babies at this time. One would think that the individual would hesitate to take on added responsibilities when the future is so uncertain. There is a shortage of everything in civilian life except babies and victory gardens. Perhaps the same psychology underlies both of these excesses.

The nation needs women in industry to take the place of the men who have gone to war. Already nineteen millions have war jobs. It would seem that there would be no time to have babies. But this is a mere man's opinion. What the women think, or do, is another matter. We have asked a number of them their opinion upon the matter and this is what they say:

"A large number of war babies may be said to have been conceived out of the emotional longing of the wife to have some part of her husband left to her, should he go overseas and be killed in action. Other couples, more advanced in age and faced by the possibility of a long separation, may realize that if they do not have the baby they had been intending to have for years, it may be too late. They feel that it is either now or never." Another expresses her reasons somewhat differently: "In the midst

of so much confusion we all feel the need of anchorage and stability, a real purpose in living and something definite to tie to. A baby can be a practical material expression of a spiritual need." Improvment of the family's economic status is a commonly given reason, "Now we can afford one." Some have mentioned the warbride who rushes into matrimony because of the soldier's short leave, and has no time to get contraceptive advice. Most mention the abandonment of increased emotional stress.

A not unimportant factor must be the increased fertility of the soldier. Millions of American men are getting better food, and better balanced food than they have ever gotten in their lives. They live more out-of-doors than ever before. In addition they get a physical training that puts them in the pink of perfection. They are better men than they used to be.

Will the Three-Year Plan Last?

THE new color scheme on the campuses brings new problems and suggests new questions. The khaki-clad students are embarked on the first nationwide accelerated program of medical education. The medical course will consist of thirty-two months of continuous training and will be followed by a year's training in a hospital as interne. The premedical education will be squeezed into fifteen months. Naturally it will be quite strenuous. In fact provision is made for a 66% scholastic mortality. Those who are accepted for this training will have supplied to them their clothing, their books and their tuition fees, $2.50 to $3.00 per day subsistence plus the pay of a private. They will live under army discipline. They will have no say as to which school they will be assigned. The medical schools are asked not to lower their present high standards. This increased load must be borne by faculties that are already depleted. That they will measure up to what is expected of them, there is no doubt. The medical profession has always met its responsibilities. This tradition is as strong in the medical profession as the one in the theatrical profession that "the show must go on".

Whether the accelerated program will outlast the Duration is an interesting question. Much can be said in its favor. The medical curriculum had been loaded and stretched until the average graduate was well in his thirties before he was in a position to serve his community. He had spent from two to four years in college, four years in medical school and from three to five years in hospital training. Even before the present emergency, efforts had been made to shorten this time. In some universities the collegiate and the medical courses could be telescoped. Some of the basic sciences of the first two years of the medical course could be counted towards an academic degree so that the student could get his B. S. degree at the end of his second year in medicine and his M. D. degree after a combined course of six years. At least two medical schools were already teaching the entire year, and the student, if he elected, could complete the customary four years of medical instruction in three calendar years.

American educational systems have been built around the central idea of a summer vacation for so long that we have grown to believe it is necessary. But is it? We are no longer an agricultural people and the long summer vacation is wasted time to most students. The faculty look on this as their own especial time, necessary for their recovery from the strenuous winter teaching. If this is really valid, the faculties can be enlarged so that the necessary recovery periods can be provided for individual members. It is also argued that many students need the summer vacations in order to earn money with which to go to school the following year. This is economically unsound. By beginning his practice one and a half to two years earlier he would earn more

than he would clerking in a summer hotel the four or five summers of his collegiate and medical college career, provided he could get the job in the first place. But even granting that the occasional student could not arrange for his academic expenses, the summer studying could be optional as it was before the war in the two schools that had begun this plan.

At present there are certain difficulties and frictions that have to be ironed out. For instance, the preparatory schools have not geared their courses to that of the colleges and the colleges to the medical schools, so that unnecessary time is lost between the one and the other. Then, too, many hospitals are accustomed to signing up internes for a year beginning the first of July. There is no real reason why the hospitals should not take the new internes whenever they graduate. As a matter of fact, a new crop of internes every four months instead of the entire staff being renewed once a year, would make for a more uniform service to the patient, although it might complicate the interne instruction somewhat.

It is to be hoped that the accelerated plan will be so streamlined that it will not only furnish the Armed Forces with the needed medical personnel, but will also provide an extensive experiment in medical education to determine whether the post-war medical students' time can be conserved in like manner.

Societies

Tazewell County Medical Society.

At the meeting of this Society held on July 8th, the following officers were elected: President, Dr. J. W. Witten, North Tazewell; vice-president, Dr. W. C. Jackson, Amonate; and secretary-treasurer, Dr. J. A. Robinson, Richlands. Dr. Hampton St. Clair of Bluefield, W. Va., read a paper on "The Surgical Management of the Ruptured Appendix".

Alexandria Medical Society.

At a recent meeting of this Society, the following officers were elected: President, Dr. S. H. Williams; vice-president, Dr. C. E. Arnette; and secretary-treasurer, Dr. Alfred Abramson. Delegate and alternate to the State Society were also named at this time.

Dickenson-Buchanan County Medical Society.

At its regular monthly meeting on July 21st, the subject of "Mouth Infection" was presented. At the May meeting, delegates and alternates to the State Society were appointed.

Dr. J. C. Trivett, Page, is president of this Society and Dr. T. C. Sutherland, Haysi, secretary-treasurer.

Mark Your Calendar Now and Make Plans to Attend the Meeting of the Medical Society of Virginia in Roanoke, October 25, 26, and 27

News

News from the Medical College of Virginia.

The alumni of the college in Puerto Rico recently presented a $500.00 War Bond as a gift to their alma mater in appreciation of the service of the institution to them.

A grant of $5,000 has been made by the W. K. Kellogg Foundation for loans to students in the school of dentistry. This is the second grant made by the foundation for such loans.

Mr. J. P. Finnegan joined the faculty of the college on July 1 as research assistant in pharmacology, coming to us from the University of California department of pharmacology.

Dr. Miriam Clarke on July 1 replaced Dr. L. D. Abbott, assistant professor of biochemistry, who has enlisted in the navy. Dr. Clarke is a graduate of Yale University in physical chemistry. She will act as research associate in biochemistry. She has had excellent teaching and research experience.

Mr. Geoffrey Jefferson, Manchester, England, chief consultant in neurosurgery for the British government, was the recent guest of Dr. C. C. Coleman, professor of neurological surgery. Mr. Jefferson was making a tour of the main neurosurgical clinics of the United States.

Dr. E. I. Evans, assistant professor of surgery, attended the meting of the shock committee of the National Research Council in New Haven, Connecticut, July 11 and 12, reporting on the research work in shock being done at the college.

The Medical Society of the State of North Carolina

Installed Dr. James W. Vernon of Morganton as president for the year 1943-4, at its recent meeting held in Raleigh. Dr. Paul F. Whitaker of Kinston was chosen president-elect, Drs. Frederic C. Hubbard of Wilkesboro and George L. Carrington of Burlington vice-presidents, and Dr. Roscoe D. McMillan of Red Springs was re-elected secretary-treasurer. The 1944 session will be held at Pinehurst.

Dr. Hawes Campbell, Jr.,

Has located in Staunton, where he is connected with the staff of the Western State Hospital.

Married.

Dr. Alexander Spotswood Robins, Richmond, and Miss Sarah Emma Hutcherson, Reidsville, N. C., July 28th. Dr. Robins is a graduate of the Medical College of Virginia in 1936.

Dr. Maurice Sidney Vitsky and Miss Betty Jane Wallerstein, both of Richmond, June 27th. Dr. Vitsky graduated from the Medical College of Virginia in 1942 and is now in the Medical Corps of the U. S. Navy.

Promotions in the Service.

This office has been notified of the following promotions of members of the Medical Society of Virginia who are now serving in the medical corps of the U. S. Army:

Dr. Edward H. Williams, Richmond, to Lieutenant-Colonel.

Dr. Wilbur R. Southward, Jr., Richmond, to Lieutenant-Colonel.

Dr. W. L. Ball, Richmond, to Lieutenant-Colonel.

Dr. J. F. Waddill, Norfolk, to Lieutenant-Colonel.

Dr. Roger G. Magruder, Charlottesville, to Major.

Dr. H. D. Fitzpatrick, Radford, to Major.

Dr. George D. Vermilya, Richlands, to Major.

Dr. T. Addison Morgan, Franklin, to Major.

Dr. Fletcher L. Raiford, Franklin, to Captain.

Dr. B. Randolph Allen, Suffolk, to Captain.

Dr. R. Bruce Mallett, Orange, to Captain.

The National Society for the Prevention of Blindness

Announces that a prize of $250 will be awarded for the most original paper adding to the present knowledge about medical treatment of non-congestive glaucoma. Papers should be in the office of the Society, 1790 Broadway, New York City, by September, 1944. (This prize is being offered in addition to one that was previously announced for the most valuable original paper concerning the diagnosis of early glaucoma.)

Papers may be presented by any practicing ophthalmologist of the Western Hemisphere and may be

written in English, French, German, Italian, Spanish and Portuguese, but those written in any of the last four languages should be accompanied by a translation in English.

The award will be made by the Society with the guidance of an ophthalmological committee composed of Doctors Evans, Keil, Kirby, McLean, Reese, Samuels, Schlivek, Schoenberg and Webster.

Dr. Tom A. Williams,

Formerly of Washington, D. C., is now located in Asheville, North Carolina, where he is directing the City Clinic for Mental Hygiene.

Dr. S. H. Macht,

Formerly of Crewe, is now at the Jefferson Hospital, Philadelphia, where he is taking special training in x-ray for the next year.

Dr. William Bickers,

Richmond, has just returned from the Elizabeth Steel Magee Hospital of the University of Pittsburgh, where he spent a month investigating research problems in the field of gynecologic endocrinology.

Dr. Leslie M. Bell,

Winchester, has recently been certified as a Diplomate of the American Board of Surgery.

The American Congress of Physical Therapy

Will hold its twenty-second annual scientific and clinical session, September 8-11, at the Palmer House, Chicago. The annual instruction course, including round table discussion groups, will be held the first three days, as well as the scientific and clinical sessions. All of these sessions will be open to the members of the regular medical profession and their qualified aids. For further information, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

Dr. M. Pierce Rucker,

Richmond, was a member of the faculty for the Graduate Short Course for Doctors of Medicine, held in Jacksonville, Fla., June 21-26, and had charge of the section on obstetrics. This course is presented each year by the Department of Medicine of the Graduate School of the University of Florida in cooperation with the Florida Medical Association and the Florida State Board of Health.

Medical Society of the District of Columbia.

At the annual meeting of the Society in May, Dr. James N. Greear, Jr., was named president-elect for the coming year, and Drs. Custis Lee Hall and Carolyn Pincock vice-presidents. Dr. Fred R. Sanderson succeeded to the presidency on July 1st.

Dr. Ross Golden

Of New York, one of the guest speakers at the joint meeting of the Virginia-West Virginia meeting at White Sulphur Springs, W. Va., in 1940, was elected president of the American College of Radiology, at its annual meeting in Chicago in June.

Quarterly Review of Obstetrics and Gynecology.

The first number of the "Review" is a very attractive volume. Its aims and objects are set forth in the following introduction by Dr. Nicholas J. Eastman:

There has long been need for an abstract journal of Obstetrics and Gynecology in the English language. Such a periodical serves several purposes. In the first place it calls to the notice of the reader a vast array of articles which he would otherwise miss; and some of these he may find of special interest and value. Secondly, if the papers are well selected and comprehensively abstracted, a publication of this kind is a valuable time saver,—surely, no small consideration in these hurried days when the pressure of practice leaves little time for medical literature. Finally, the bound volumes of an abstract journal, when properly indexed, constitute a most useful reference work in which the whole recent literature on any given subject may be reviewed in sequence.

That great and scholarly German abstract journal, *Berichte über die Gesamte Gynäkologie und Geburtshilfe,* which covered not only obstetrics and gynecology but certain related fields, was for many years a model of its kind. This is no longer available and it will doubtless be many years (if ever) before it attains its pre-war calibre; moreover, even in its prime the Berichte could be found in only a few of the larger medical libraries in this country and reached but a handful of American practitioners. It is particularly fitting, therefore, that an abstract journal in the English language be launched.

The Quarterly Review of Obstetrics and Gynecology represents a beginning in this direction. It is hoped that succeeding issues will cover an increasing number of articles and that with the post-war period each issue will provide a comprehensive and up-to-the-minute survey of the entire world's literature in this field.

Dr. Clifton R. Titus

Is now located at Box 376, Bedford. He was formerly at Bassett.

Dr. George C. Snead,

Recently of Covington, is now located in Derby where he is engaged in industrial practice.

Dr. Ben M. Kagan,

Richmond, has been made a member of the American Academy of Pediatrics and also become a licentiate of the American Board of Pediatrics last December. He is now a Lieutenant in the Medical Corps of the U. S. Army and stationed at Orangeburg, N. Y.

Rotary Club Officers.

Drs. William H. Higgins and Herbert T. Wagner were recently elected as members of the Board of Directors of the Richmond Rotary Club.

Dr. T. Dewey Davis

Was recently elected president of the Richmond Tuberculosis Association to fill the unexpired term of Captain Fred W. Scott, resigned. Dr. Davis has served as a member of the board of directors for many years and has been chairman of the medical committee and the annual early diagnosis campaign as well as a member of the executive committee.

Dr. William T. Graham,

Richmond, has been reappointed by Governor Darden as a member of the State Board of Health. He has been a member for thirty years and is now president of this body.

American Public Health Association.

The Wartime Conference and 72nd Annual Business Meeting of this Association will be held in New York City, October 12-14, with headquarters at the Hotel Pennsylvania. Health workers within easy access of New York City are invited to attend. The conference program will be carried in the September issue of the *American Journal of Public Health*, and further information may be obtained from the Association at 1790 Broadway, New York 19, N. Y.

Dr. Alfred Chambers Ray,

Formerly of Ashland, has been appointed the first full-time resident of the Richmond City Home. He will work in conjunction with a consulting staff of 13 physicians.

Major Harry J. Warthen, Jr., MC.,

Has recently returned to Atlantic City after taking the course in Aviation Medicine at Randolph Field, Texas, and Nashville, Tennessee.

The Raiford Memorial Hospital,

Franklin, sponsored a summer clinic on July 15th. This was attended by thirty-four physicians and others are planned for August and September. The program was as follows: V-D Control Method by Dr. Raymond Kimbrough, Norfolk; and Recent Advances in Vitamin Therapy and Clinical Manifestations of their Deficiencies by Dr. J. D. Hough, chief of the Internal Medicine Department of the Raiford Hospital.

Dr. Raymond A. Vonderlehr

Has been appointed director of District No. 6 of the U.S.P.H.S., covering Puerto Rico and the Virgin Islands. He is a native of Richmond and a graduate of the Medical College of Virginia. Dr. Vonderlehr has just completed eight years as assistant surgeon-general in charge of the division of venereal disease, and was stationed in Washington.

Dr. E. G. Gill,

Roanoke, was installed as President of Lions International at its annual meeting in Cleveland on July 20th.

New Books.

The following are recent acquisitions to the library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Adolph, E. F.—Physiological regulations.
Alschuler, Rose H.—Children's centers.
Amar, Jules—The human motor, or the scientific foundations of labour and industry.
American Association for the Advancement of Science—Alcohol explored.
Bennett, H.—Chemical formulary. Vol. 6.
Boyle—Fractures of the jaws.
Cobb, Stanley—Foundations of neuropsychiatry.

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Cutler, Condict W., Jr.—The hand: its disabilities and diseases.

Flikke, Julia O.—Nurses in action.

Galdston, Iago—Behind the sulfa drugs.

Ham, A. W. & Salter, M. D.—Doctor in the making; the art of being a medical student.

Henderson, Yandell & Haggard, H. W.—Noxious gases and the principles of respiration influencing their action.

Herrold, Russell D.—Chemotherapy of gonococcic infections.

Hinsie, L. E. & Shatzky, J.—Psychiatric dictionary with encyclopedic treatment of modern terms.

Hume, Edgar Erskine—Victories of army medicine.

Huxley, Julian—Evolution.

Kampmeier, Rudolph—Essentials of syphilology.

King, E. S. J.—Surgery of the heart.

Mayer, A. W.—Chemical-technical dictionary.

Mills, Clarence A.—Climate makes the man.

National Research Council—Manual of industrial hygiene.

Needham, Jos.—Biochemistry and morphogenesis.

Pattison, H. A.—Rehabilitation of the tuberculous.

Plesch, J.—Heart and blood vessels.

Roussy, G. et Oberling—Atlas du cancer.

Sappington, C. O.—Essentials of industrial medicine.

Spemann, H.—Embryonic development and induction.

Sumner & Somers—Chemistry and methods of enzymes.

van Dyke, H. B., and others—Protein hormones of the pituitary body.

Wanted.

Partner or assistant on account of failing health and inability to take care of well built up small town and country practice. Good chance for right man. Salary or commission. Box 103. Brookneal, Va. (*Adv.*)

Physician Wanted.

Excellent location for general practitioner and internist in one of Virginia's best industrial towns, Shenandoah Valley. Modern hospital privileges available to right party. Address reply to D.C.F., care this Journal. (*Adv.*)

For Sale.

McKesson Gas-Oxygen outfit, No. 306, complete in portable carrying case.

Elliott Treatment unit, complete on stand.

Write No. 175, care the VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond 19, Va. *(Adv.)*

Wanted.

Beck-Lee portable Electrocardiograph in good working condition. Also, National Autoclave, 25 quart size. If you have one or both, write "Electro", care the MONTHLY, stating price, etc. *(Adv.)*

Obituaries

Dr. William Reese Williams,

Prominent Southwestern Virginia physician, died at his home in Richlands on July 17th. He was seventy years of age and a graduate of the Medical College of Virginia in 1897. Dr. Williams located for practice in Richlands in 1898. In 1915 he built the Mattie Williams Hospital there and in 1937 established the Hospital at Grundy. He was prominent in civic and political affairs and was the first president of the Richlands Rotary Club. Dr. Williams was a member of the State Board of Health and was very active in the work of the Tazewell County Medical Society. He joined the Medical Society of Virginia in 1897 and served as vice-president in 1941-2. His wife and five children survive him. A son is Dr. James Peery Williams, lieutenant-commander in the U. S. Navy.

Dr. Adam McClintic Byrd,

Bluefield, W. Va., died July 4th, after a week's illness. He was seventy-five years of age and a graduate of the Medical College of Virginia in 1898. Dr. Byrd practiced for sometime in Virginia at Richlands and North Fork, before locating in Bluefield. He was a member of the Medical Society of Virginia, having joined in 1904. A brother survives him.

Dr. Willard Bellamy Robinson,

Richmond, died July 4th. He was eighty-one years of age and graduated from the Kentucky School of Medicine, Louisville, in 1886. Dr. Robinson practiced at Tappahannock for sixteen years before moving to Richmond. He was formerly a member of the Medical Society of Virginia. His wife and three children survive him.